लाल बहादुर शास्त्री प्रशासन अकादमी
Lal Bahadur Shastri Academy of Administration
मसूरी
MUSSOORIE

पुस्तकालय
LIBRARY

110476

अवाप्ति संख्या
Accession No. ~~1558~~
वर्ग संख्या
Class No. 573
पुस्तक संख्या
Book No. ~~Gui~~ Cur

Current Anthropology

Contributors

JOHN W. BENNETT
EDWARD P. DOZIER
GORDON F. EKHOLM
LOREN C. EISELEY
RAYMOND FIRTH
CHRISTOPH VON FÜRER HAIMENDORF
JAMES B. GRIFFIN
EMIL W. HAURY
W. W. HOWELLS
JULIAN S. HUXLEY
WILHELM KOPPERS
A. L. KROEBER
OSCAR LEWIS
DAVID G. MANDELBAUM
ADOLPH H. SCHULTZ
PAUL B. SEARS
SOL TAX
LAURISTON WARD
KURT H. WOLFF

Current Anthropology

A Supplement to Anthropology Today

Edited by

WILLIAM L. THOMAS, Jr.

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO · ILLINOIS

The YEARBOOK OF ANTHROPOLOGY—1955 and the publication of this volume of excerpts were made possible by the Wenner-Gren Foundation for Anthropological Research, Incorporated. The contributed chapters were prepared upon invitation; the views expressed therein are those of their respective authors. Copyright for this volume was transferred by the Foundation, with waiver of all royalties, to The University of Chicago Press. The Press, as publisher, hereby gratefully acknowledges the desire of the Foundation to make possible an inexpensive reproduction for public sale of Parts I–III of the YEARBOOK OF ANTHROPOLOGY—1955, previously published by the Foundation in a limited edition for private distribution to scholars and institutions throughout the world.

Library of Congress Catalog Number: 56-7961

THE UNIVERSITY OF CHICAGO PRESS, CHICAGO 37
Cambridge University Press, London, N.W. 1, England
The University of Toronto Press, Toronto 5, Canada

© 1955 by the Wenner-Gren Foundation for Anthropological Research, Inc. Second Impression 1956
© 1956 by The University of Chicago. Published 1956
Printed in the U.S.A.

TO

DR. AXEL LEONARD WENNER-GREN

Preface

THIS volume consists of the first three parts of the *Yearbook of Anthropology—1955,* first published and distributed by the Wenner-Gren Foundation, under whose auspices it was prepared. The *Yearbook,* intended to report on the major accomplishments and trends during 1952–1954 in aspects of the field of anthropology, included—as well as the substantive articles which appear here—summaries of applications of anthropology and reports on regional activities as well as certain reference data. The materials included in this edition will, we hope, have the effect of supplementing and extending the encyclopedic inventory of the field begun with *Anthropology Today* (University of Chicago Press, 1953).

The idea of a yearbook seems both timely and of great value. The discipline of anthropology in recent years has grown spectacularly in influence and in numbers of students and professional workers. We feel that it is most opportune to bring into existence a publication devoted solely to summarizing recent scholarly achievements through articles of wide scope accompanied by extensive, selected bibliographies. With this volume, anthropology joins the company of such other fields as law, education, psychology, etc., which have their own yearbook series.

The *Yearbook of Anthropology* is envisaged as a new series of annual publications. However, we wish to emphasize the experimental nature not only of this first volume, in content, organization, and means of presentation, but also of the publication series itself. The production of the first volume should be looked upon as a pilot project. It cannot be stressed too strongly that the preparation of subsequent volumes depends upon the response from the anthropological profession, indicating the need to continue this series and containing imaginative ideas for the improvement in quality and usefulness of future issues.

Ours is an age of specialists, and it is not surprising that anthropology, too, should have its own. We have our experts in radiocarbon dating and in ceramic typology and our specialists in anthropometry and linguistic analysis. We long have had anthropologists who centered their attention on culture history and even on a single subject, such as kinship, relating to the organization of human groups. Further, we have those who specialize on a single phase of kinship or on single tribes or cultural groups in one particular area. One has only to consult the catalogue of courses for any major university which offers an advanced degree in anthropology to see how far subdivision has gone.

To be sure, much of the credit for the progressive recent changes in anthropology rightfully belongs to the specialists who have influenced professional thought and practice in many ways. By focusing their efforts on a single aspect of the complex process of human existence, they have been able to see problems long unnoticed and to effect changes sorely needed. Of course, the path of change has not always been straightforward. More than one proposal which was hailed as an epoch-making discovery and given immediate application—sometimes with more enthusiasm than critical judgment—subsequently has been found to be neither a discovery nor an improvement. It nevertheless is true that our specialists have made significant contributions to modern anthropology. The future holds the promise of even greater developments.

The layman's stereotype of an anthropologist as a scholar concerned only with skulls, weird customs, and potsherds reflects too simple a picture, for modern anthropologists assert that their discipline holds up a "mirror for man" and is, indeed, the study of man. In a culture which places value on the widest possible diffusion of knowledge to the greatest number of people, the relationships between professional scholars and laymen is a fundamental problem in communication and education. To a much greater extent than is sometimes recognized, the contributions of anthropological research become significant only as they are understood and applied by individuals, whether for personal information and use or in their role as researchers or instructors. If teachers are able to see the total pattern of anthropology, while engaged in their specific tasks, they may better accelerate the pace of anthropological progress. It is hoped that by its summary of current achievements *Current Anthropology* will be a stimulus and encouragement to anthropological research and education.

Professional anthropologists, however, are not the only ones who have a vital interest in the principles and practices of the discipline. Just as the professional anthropologists have become increasingly aware of the contributions of other disciplines, so have the heads of schools and planners of curricula taken more and more interest in the contributions of anthropology. In the United States, for example, education traditionally has been a matter of public opinion. Boards of education, the bodies that decide local policy, are generally composed of laymen rather than professional educators. What is needed is an alert, informed public opinion that is sensitive to the implications of anthropological theories and that understands the goals toward which anthropologists are striving. Though public opinion tends to see immediate problems rather than more basic issues, the informed layman sometimes sees social and economic implications in anthropological research to which a research scholar may not be sensitive. Thus, thoughtful public opinion may serve to supplement professional judgment. It is hoped that *Current Anthropology* will add to the understanding that public-spirited citizens have of anthropological problems.

This volume is intended also for a third group of readers: those, other than anthropologists, who are scientifically or professionally trained. These include the psychologist and the sociologist, the geneticist and the anatomist, the geologist and the ecologist, the legislator and the journalist, and others whose activities bring them into contact with anthropologists, their writings and their theories. To our colleagues in related fields it is hoped that *Current Anthropology* offers a means of deepening their insight into the problems confronting anthropologists today.

On the dedicatory page we offered this volume to Dr. Axel Leonard Wenner-Gren, whose insight and wisdom in founding The Viking Fund, Inc., fourteen years ago made possible the organization which has come to be the Wenner-Gren Foundation for Anthropological Research. We are indebted to the Foundation's Board of Directors for their faith in authorizing the original Foundation-sponsored project and providing the necessary funds in its support.

Those members of the Foundation's staff who merit special recognition are Miss Nancy Silbowitz, for her patient efforts to complete bibliographies, and Mrs. Jean S. Stewart, who, from the inception of planning, has collaborated as secretary and editorial assistant. Their spirit of steadfast and enthusiastic co-operation over long hours has provided great assistance to all phases of the editorial process.

Any volume as comprehensive as the original *Yearbook* must be the product of many minds. It is the contributing authors who gave that volume, and this one as well, the merit it has; in anticipation of the aid that *Current Anthropology* will give to readers, we thank the authors publicly for their assistance. The names which appear at the head of each article are those of the scholar or scholars who prepared it, but we have found no convenient way of indicating the names of our many other contributors and advisers who assisted in formulating the scope and content of the book itself. That our contributors come from most of the major institutions of higher learning that conduct research and education in anthropology in the United States, from foreign countries as well, and also from fields other than anthropology, indicates that the progress of the discipline depends on no small group of people or institutions. The willing co-operation of the many contributors has been possible largely because of their faith in the enduring achievements of anthropology and their hopes for its future. It is in their name that the Wenner-Gren Foundation offered the original *Yearbook of Anthropology* to their professional colleagues and to the growing number of laymen who appreciate their stake in anthropology today—that the "study of man" includes themselves. It is our hope that the present volume will bring this appreciation to an even wider audience.

WILLIAM L. THOMAS, JR.

Table of Contents

PART ONE

GUEST EDITORIAL

PAGE

EVOLUTION, CULTURAL AND BIOLOGICAL
Julian S. Huxley 3

PART TWO

MAN'S PAST: ENVIRONMENTS, RELICS, ANCESTORS

INTRODUCTORY 29

CHANGING MAN'S HABITAT: PHYSICAL AND BIOLOGICAL PHENOMENA
Paul B. Sears 31

✓ PRIMATOLOGY IN ITS RELATION TO ANTHROPOLOGY
Adolph H. Schultz 47

✓ FOSSIL MAN AND HUMAN EVOLUTION
Loren C. Eiseley 61

OLD WORLD ARCHEOLOGY AND PREHISTORY
Lauriston Ward 79

NEW WORLD CULTURE HISTORY
Gordon F. Ekholm 99

ARCHEOLOGICAL THEORIES AND INTERPRETATIONS
Emil W. Haury 115

CHRONOLOGY AND DATING PROCESSES
James B. Griffin 133

CULTURE HISTORY AND CULTURAL DEVELOPMENT
Christoph von Fürer-Haimendorf 149

DIFFUSION: TRANSMISSION AND ACCEPTANCE
Wilhelm Koppers 169

PART THREE

OTHER CONSIDERATIONS OF THEORY

INTRODUCTORY 185

THE CONCEPTS OF "PRIMITIVE" AND "NATIVE" IN ANTHROPOLOGY
Edward P. Dozier 187

THE STUDY OF COMPLEX CIVILIZATIONS
David G. Mandelbaum 203

PAGE

UNIVERSALITY AND VARIATION IN HUMAN NATURE
W. W. Howells 227

FUNCTION
Raymond Firth 237

COMPARISONS IN CULTURAL ANTHROPOLOGY
Oscar Lewis 259

HISTORY OF ANTHROPOLOGICAL THOUGHT
A. L. Kroeber 293

THE INTEGRATION OF ANTHROPOLOGY
Sol Tax 313

TOWARD COMMUNICATION BETWEEN SOCIOLOGY AND ANTHROPOLOGY
John W. Bennett and Kurt H. Wolff 329

INDEX

INDEX 355

Part One

Guest Editorial

Part One

Guest Editorial

ABOUT THE AUTHOR

Julian S. Huxley, M.A., D.Sc., F.R.S., has achieved fame as a biologist and a teacher, as director of many learned societies, as a governmental advisor, and through his contributions to the cause of science as a writer. It is from his vantage point as an eminent biologist become scientist-philosopher that he was invited to contribute this guest editorial.

He was born in London on June 22, 1887, the second son of the late Leonard Huxley, grandson of T. H. Huxley, and great-grandson of Thomas Arnold. He was educated at Eton and Balliol College, Oxford, where he won the Newdigate Prize for verse. After World War I he was a Fellow of New College, Oxford, until 1925, when he was appointed Professor of Zoology in King's College, at the University of London. In 1946 he was made Executive Director of the Preparatory Commission of UNESCO, and in November 1946 was elected its first Director-General, a post at which he served until 1948. He is the recipient of many honorary degrees and awards, including the Huxley Memorial Lecture and Medal (1950) of the Royal Anthropological Institute of Great Britain and Ireland.

Dr. Huxley is the co-author of such volumes as: *Animal Biology, The Science of Life,* and *Elements of Experimental Embryology.* Among his books are: *Essays of a Biologist, Science and Social Needs, Man Stands Alone, Evolution: The Modern Synthesis, On Living in a Revolution, Man in the Modern World.* His most recent works include: *Evolution in Action,* 1953; *Ancient and Modern,* 1953; and, as editor, *Evolution as a Process,* 1954.

Evolution, Cultural and Biological

JULIAN S. HUXLEY

WHEN I was invited by the Wenner-Gren Foundation to prepare "a guest editorial on a subject of my choice," concerning my views on anthropology, I was naturally flattered, but also experienced considerable trepidation. Even if an evolutionary biologist had any views on anthropology, how could they be of any value to professional anthropologists? However, I reflected, an evolutionary biologist, if he should not aspire to views *on* anthropology, might be expected to have some view *of* anthropology in relation to the overall process of evolution. This, then, is what I shall attempt—a view of anthropology *sub specie evolutionis,* in the belief that the general concepts and principles derived from biology will prove to have illuminating applications in—or at least implications for—the more restricted and younger sister science of anthropology.

Let me at the outset disarm your natural suspicions by a comprehensive disclaimer. I do not believe that any purely biological concepts and principles can be immediately applied or directly transferred to anthropology. In fact I know they cannot; I also know that the various attempts which have been made in the past at such direct transference and application, have been misguided and have always resulted in confusion rather than clarification. The reason is simple: although the history of man is clearly part of a more general evolutionary process, its basis and mechanism is something *sui generis*. Man is a unique organism with unique properties, and there must be anthropological concepts and principles which are specific and restricted to man in their application. With this anticipatory disclaimer, let me proceed to a presentation of my argument.

In the last few decades, it has become clear that the whole of phenomenal reality is a single process, which properly may be called evolution. Further study has enabled us to give a general definition of evolution: evolution is a self-maintaining, self-transforming, and self-transcending process, directional in time and therefore irreversible, which in its course generates ever fresh novelty, greater variety, more complex organization, higher levels of awareness, and increasingly conscious mental activity.

Though the process of evolution is unitary, embracing the entire universe both in space and time, it is divisible into three very distinct sectors or phases, each with its own mechanism of self-transformation, its own characteristic tempo of change, and its own type of products. The earliest and also the largest is the inorganic or cosmological sector; the much restricted organic or biological sector arose as a later phase from the inorganic; and the still further restricted human or psycho-serial phase arose much later from the organic.

Here I shall be concerned only with the two later phases. The biological phase operates by the method of natural selection. This is an inevitable result of the basic capacity of living matter for self-reproduction—for multiplying itself by self-copying. However, the copying is not always exact, so that living matter is both self-reproducing and self-varying. The different self-reproducing variants will differ in their average chances of surviving and perpetuating their kind; and this automatically results in natural selection—which is merely a brief phrase to denote the differential survival and reproduction of variants.

In all organisms, the units of self-reproduction are the genes, which together constitute the gene-complex or genetic system, carried by the chromosomes. The primary units or quanta of variation are the mutations, or reproducible variations, in the genetic system—variations in number of chromosome-sets or chromosomes, in parts of chromosomes, or (the most important type) in single genes.

The evolutionary effectiveness of variation is much increased by the sexual process, for this enables mutations occurring in separate lines to be combined in a single strain: the variation we find in nature in sexually-reproducing animals and plants, though dependent originally on mutation, owes its actual extent to the recombination of mutants due to past mutations.

Since such extensive variation is itself of selective advantage, in enabling organisms to adjust themselves more quickly to changes in conditions and also to exploit new resources of the environment, the capacity for sexual exchange and the resultant recombining of variants must have been one of the earliest properties acquired by evolving life, and is in fact practiced by the immense majority of organisms, including at least some bacteria and even some viruses.

It can be calculated that even a very small selective advantage, down to half of one per cent and less, though its detection in nature would be impossible, and would need breeding experiments on a prodigious scale to establish in the laboratory, will be effective in producing evolutionary changes at the rates actually found to occur.

The evolutionary changes thus produced inevitably will be adaptive, in the sense that they will improve the adjustment of life to its environment, and at the same time the obverse of adjustment, namely the exploitation of the environment by life. During evolution, this two-faced improvement is manifested by a steady rise in the efficiency of performance of separate functions, such as muscular contraction, nervous conduction, digestion, sensory acuity and awareness, in their coordination and integration, and in the level of general organization attained.

The environment available to life is extremely varied. Accordingly one important kind of biological improvement consists in the better adjustment of life to this variety of conditions, and its exploitation of a greater variety of environmental resources. However, even with the aid of sexual recombination, living matter can only reproduce itself in the form of separate strains, between which no exchange of variation is possible. In the few non-sexual organisms, these "variation-tight" strains are single lines of descent. In sexual organisms the spread of variation is not so fully impeded, but is still restricted within the limits of groups capable of fertile interbreeding—in other words, separate species; each such "variation-tight" species is then a network of intercrossing lines of descent, but is biologically insulated from all others.

As a result of this limitation of genetic systems, improved adjustment to, and exploitation of, the variety of the environment is possible only through evolutionary divergence. This involves the radiation of living matter into a number of separate strains, incapable of sharing new variations, and each adjusted to one level of living, one way of life, one ecological niche, one facet of nature's multitudinous variety. To take an example, the weasel and stoat of Britain, though so alike as to be both grouped in the same genus *Mustela,* are two completely distinct species of placental mammal. The entire Class of placental mammals is undoubtedly descended from one original common stock. During some fifty or sixty million years, this single stock diverged or radiated into a number of Orders, of which Rodents, Bats, Primates, Cetaceans, Elephants, odd-toed and even-toed Ungulates, Insectivores, and Carnivores are the most familiar. The Carnivores in their turn underwent further divergent evolution, eventually radiating into a number. Families, such as seals, sea-lions, walruses, cats, dogs, bears, raccoons, civets and mustelids (weasels in the broad sense). Each family radiated further into a number of Genera, and those into a number of Species. The family Mustelidae thus produced various genera, such as *Martes* (martens), *Lutra* (otters), *Gulo* (gluttons), and *Mustela;* and the ancestral Mustela has produced many distinct species in different parts of the world, of which the European stoat and weasel, *Mustela erminea* and *M. nivalis,* are two.

The variety of distinct patterns of organization and levels of living arising by evolutionary divergence on the large scale is illustrated by the list of major groups or Phyla of organisms—Bacteria, Fungi, Algae, Mosses, Ferns, Flowering Plants, Protozoa, Sponges, Coelenterates, Flatworms, Roundworms, Annelid worms, Molluscs, Arthropods, Echinoderms, Vertebrates, each with its own peculiar type of organization, biologically incommensurable with all others, and in their totality reflecting the prodigious variety of the environment and environmental opportunity. At the other end of the scale, the degree to which living matter has been cut up into biologically separate units can be realized from the fact that the total number of distinct species or ultimate non-interbreeding groups now in existence (which can be only a small fraction—perhaps ten per cent at most—of the total number which has ever existed) is at least one and a quarter million, and that the Beetles, which are but one Order of one Class of one Phylum of one Kingdom, comprise over 300,000.

However, in addition to divergence, or adaptation to variety, evolution includes advance, or improvement in organization. Such biological improvement may be of several rather different kinds. It may consist in the specialization of a stock for a particular way of life, as in the classical example of the horse stock (Equidae) with its fifty-million-year specialization for rapid running, browsing, and then grazing; or to fit a particular ecological or adaptive niche, as in the protective cryptic colors and shapes of insects inhabiting green foliage. As we have just seen, it may consist in the divergent radiation of a primitive type into a number of specializations, leading to an improved exploitation of environmental variety. Or it may consist in better physiological performance of some function: the speed of conduction in nervous tissue has been increased nearly a thousand-fold during metazoan evolution, the efficiency of flight is far higher in modern birds than in the ancestral Archaeopteryx, and the care of the young was radically improved in the hundred-million years of mammalian evolution from egg-laying to marsupial and finally to placental types. The most spectacular and important of such improvements in particular capacities is mental improvement, or, in more general terms, improvement in awareness. The earliest animals were blind, deaf, and wholly brainless. During evolution sensory capacity was prodigiously improved, culminating in organs like the eyes of birds and the ears and noses of mammals, and so was the capacity for coordinating and utilizing experience through knowing, feeling, and willing, culminating in the cerebral cortex of dogs, elephants, and apes.

Finally, advance may consist in an improvement in general organization. This is evidenced by the improvements in methods of coordination, nervous and humoral, notably of homoeostatic mechanisms for self-regulation like those of higher land vertebrates for maintaining a constant temperature or a constant acidity and chemical composition of the blood; in greater individuation; and finally in the organization of mental capacities and awareness and the utilization of stored experience, leading to a greater continuity and individuation of mental life.

Evolutionary advance is achieved through a succession of dominant or successful types, each embodying some improvement in general organization. The new type becomes dominant on the evolutionary stage by what is called adaptive radiation—multiple specialization leading to improved exploitation of environmental variety. Each specialized trend shows a steady improvement in respect of its own specialization, until it reaches a limit and becomes stabilized. If now a type is evolved possessing some new improvement in general organization, it may become dominant in its turn and if so, its success will be marked not only by its rapid and varied radiation, but also by a reduction, a partial or total extinction, of the previous dominant type.[1]

This replacement of one dominant group by another related but improved type has marked most important major advances of which we have evolutionary record—of trilobites to crustaceans, jawless pre-fish to true fish, lower to higher cephalopods, amphibians to reptiles, reptiles to mammals, mammals to man.

The failure of highly specialized lines to evolve beyond a certain point is a particular case of a general phenomenon—the phenomenon of evolutionary limitation or stabilization. Every biological improvement appears eventually to reach a limit. After this, though minor alterations are possible and new variations may be played on the old theme, no further extension of the improvement can occur, no new major theme be developed: the possibilities of that particular trend have been exhausted. This is well-known in trends toward specialization. It applies also to improvements in biological performance: it appears to be impossible, for histological reasons, to evolve an eye with an acuity of vision higher than that of a falcon, and impossible, for reasons of natural selection, to evolve a temperature-regulating mechanism more accurate than that of adult higher mammals and birds. Again, some types of organization are eventually self-limiting: the method of insect respiration, by means of air-tubes or tracheae, while admirable for small animals, is impossible for large ones: so that insects could never grow big, and therefore could never develop big brains and a high degree of intelligence.

In the succession of dominant groups, the new successful group appears almost always to originate from a relatively unspecialized member of the old. But its new improvement in turn will become exploited to the limit, or distributed among specialized and therefore self-stabilizing lines.

To make a long story short, it appears that before the mid-Pliocene period, some five million years ago, all the purely physiological and material possibilities of life had been exhausted—size, power, speed, sensory and muscular efficiency, chemical coordination, temperature-regulation and the rest. After nearly two thousand million years, biological evolution on this planet had reached the limit of its advance.

* * * * *

You will have noted that I expressly qualified my statements on evolutionary limitation. By the mid-Pliocene, a limit had been reached in the realization of the *physiological* and *material* potentialities of life, and no further major advance was possible in purely *biological* evolution—in other words, in the organic phase of the total evolutionary process. But evolution was by no means at an end. Major advance was still possible, for other major potentialities of life had not been realized, one of its most important capacities scarcely exploited.

The fact that evolution was still continuing in full force is demonstrated by the spectacular post-Pliocene rise of man to the position of dominant evolutionary type, and the even more spectacular achievements of his subsequent history. The still unrealized potentialities of life were its possibilities of fuller awareness, its mental or psychological attributes; and the hitherto unexploited capacity whose fuller utilization not only made possible the rise of man to evolutionary dominance but initiated a new phase of evolution, was the cumulative communication of experience. The resultant shareable, transmissible, and progressively transformable tradition gave rise to the new type of entity or organization technically called cultural, and evolution in the psycho-social phase has been essentially cultural, not biological or genetic.

---

[1] The details of the interrelation of old and new types vary. Sometimes the reduction seems to be directly due to the greater success of the new dominant type (as with the reduction of large mammals caused by the rise and spread of man), sometimes it seems to be brought about by environmental changes, so leaving an evolutionary vacancy into which the new type can then step (as with the widespread extinction of reptilian and marine molluscan) types toward the end of the Mesozoic, which apparently preceded the rise of mammals (and modern cephalopods) to dominance. The complexity of the interrelations between major types is seen in the history of the mammals. Wherever the placentals spread, their success brought about the total extinction of the egg-laying mammals, and the subordination and drastic reduction of the marsupials; but where no placentals existed, as in Australia, a few egg-laying mammals persisted, and the marsupials, far from being reduced, were able to produce a radiation on their own, and to realize a large number of possibilities denied to them elsewhere by placental competition.

My main thesis is then as follows: We have in the last half-century arrived at an adequate general understanding of the biological sector of the evolutionary process. This has been due to detailed study, first of what evolves—lineages of organisms of various types, including their structure, physiology, and ontogeny, and their ecological relations; secondly, of the genetic basis of evolution—the mechanism of reproduction, hereditary transmission and transformation, including the gene-complex, variation, and natural selection; thirdly, of evolution as a process—the mechanisms and modes of its self-transforming course, as revealed in phases of change and stabilization, in radiation and extinction, in succession of dominant types, in emergence of higher material and mental organization; and finally by a synthesis of the relevant results in all three fields. Our knowledge of this interlocking trinity of subject-matter—the mechanisms for maintaining existence, the bases of reproduction and variation, and the modes of evolutionary transformation—had first to be gathered and then synthesized, to give us an understanding of life's total process.

The same must assuredly hold for the human or psycho-social sector. Anthropology is the science of the psycho-social sector. It cannot expect to make full and comprehensive progress if it restricts its field. The study of social psychology and of the psychological mechanisms underlying various culture traits is important; so is a study of social structure and cultural working; and that of personality; and of social institutions and of systems and methods of education; and of culture-contact; and of kinship systems, totemic organizations, and religions; and of material artifacts; and of linguistic, technological, aesthetic, scientific, and other partial modes of evolution: but none is sufficient by itself.

As in the biological sector, so in the human: we need a knowledge of the mechanisms for maintaining psycho-social existence, of the bases of their reproduction and variation, of the mechanisms and modes of their transformations in time, together with a synthesis of the relevant results, to give us a general understanding of the psycho-social process as a whole—in other words, of man.

But anthropology was inevitably a late starter in the scientific race, and it has to cope with a subject matter both more complex and more confused than that of any other science. No wonder that understanding of the psycho-social sector of reality lags behind that of the biological and the inorganic.

Long before biology was born as a science, it seemed obvious that the individual organism provided the mechanism for maintaining existence in the biological sector. However, though this holds for most higher animals, and though there is a marked trend toward sharper and fuller individualism in the course of biological evolution, later study showed that this naïve conclusion was not quite so obvious as it at first sight had appeared. In many forms it is difficult and in some impossible to determine the limits or even the nature of the individual organism. However, there does always exist some organization of living matter whose function it is to maintain itself in direct interaction with its environment. In the terminology of modern genetics, we may speak of this as the phenotypic system. It may be composed of single individual organisms, usually of two sexes, or of communities or societies of such separate individuals (as in gregarious mammals or social insects) or of colonies in which the individuals are physically united and lose much of their pristine individuality (as with the cells of a Metazoan or the individuals of a Siphonophore or a bathsponge). But it is always a system for maintaining existence. The study of its structure and form constitutes anatomy and morphology; that of its methods of working constitutes physiology and behavior; that of its relations with the environment, including other organisms, constitutes ecology; and that of its development and growth constitutes embryology and ontogeny.

The biological mechanism of reproduction and variation proved much harder to define. Its discovery awaited the invention of the microscope and the elaboration of scientific method, both experimental and statistical. It now appears that in almost all organisms, both plant and animal, the mechanism of self-reproduction is sharply distinct from that of self-maintenance. It may be called the genotypic system. In opposition to the phenotypic system, it is locked away and sheltered as far as possible from contact or direct interaction with the environment. It consists of the gene-complex—a system of self-reproducing bodies or genes, arranged in a definite order in larger bodies called *chromosomes,* and detached in the act of reproduction within a unit of general protoplasm (cytoplasm). The chemical behavior of the cytoplasm is determined by the genes; but the gene-complex cannot survive and function without an envelope of cytoplasm. The two are interdependent, but with the gene-complex as dominant partner.

The mechanism of transmissible variation, again in all organisms, is twofold—*mutation* or change in intrinsic properties of parts of the gene-complex, and *recombination* of already existing mutants to produce new variants. You will observe that I expressly refer to *transmissible* variation. One of the notable facts established by modern genetics is the non-transmissibility of certain types of variation. Only those in the gene-complex of the reproductive cells are permanently transmissible: those affecting all other parts of the organism are not. Non-transmissible variance includes all so-called somatic variation—variations in the characters of the individual body, whether occurring in the course of normal development (as in the development of various differentiated tissues from the relatively undifferentiated ovum, spore, or other reproductive body, or in the alternation of generations in a moss or a fern); or induced by changes in the environment (as in the suntanning of white human beings, or the production of worker bees by a restricted diet); or the result of individual experience (as in the learning by solitary wasps of the location of their burrows, or by birds of the nauseous or dangerous properties of warningly-colored insects).

The two latter categories of variation embrace all so-called "acquired characters," so that the proof of their non-transmissibility is a disproof of Lamarckism and all other similar theories of evolution. The first category, however, must be characterized as reproducible but genetically non-transmissible. The distinction between transmissible and non-transmissible variation coincides almost exactly with the earlier distinction made by Weismann between *germ-plasm* and *soma.* Though Weismann's original formulation needs to be slightly modified in the light of later knowledge, the opposition between germ-plasm and soma is still basic to all our genetic thinking. Some parts of the organism—in higher animals all the somatic tissues—are debarred from playing any role in reproduction, and variations in them cannot be transmitted; other parts—the gene-complexes of actual or potential reproductive cells—are the organs of heredity, and variations in them can be and are transmitted to later generations.[2]

Thus in the light of modern biology, variations fall into the two opposed categories of genetic and non-genetic; the former resulting from changes in the properties of the gene-complex of the germ-plasm, the latter from all changes in those of the cytoplasm or of the gene-complex of the soma.

---

[2] In this discussion I have neglected the plasmagenes, or self-reproducing cytoplasmic factors in heredity. Plasmagenes do exist, notably in plants, but they are few in number and small in importance compared with the nuclear genes, and furthermore are often subordinated to them in their effects. For our purpose, they thus constitute a minor and subordinate fraction of the germ-plasm.

Furthermore, we can distinguish sharply between the mechanism of maintenance—the soma, including not only the living somatic cells but also their non-living products such as horn or chitin; and the mechanism of transmission—the germ-plasm, or more specifically the gene-complex or genetic system in the reproductive cells.

However, the sharpness of the distinction tends to break down in the simplest organisms, such as the bacteria, where the germ-plasm is much less cut off from contact with the environment; or the crystallizable viruses, which are in a sense nothing but germ-plasm, and whose "soma" is provided by the tissues of their host.

The course and modes of biological evolutionary transformation I leave until later.

The greatest present handicap to the science of man would seem to lie in its lack of agreement in defining the objects of study in the three members of the interlocking trinity of its subject-matter.

The third member, the course of psycho-social transformations, I shall discuss later. As regards the mechanism for maintaining psycho-social existence, there is by no means agreement as to what should be analyzed. This somewhat startling fact emerges clearly from works such as Bidney's *Theoretical Anthropology*. Some anthropologists say society, others culture, still others the individuals who make up the society or share the culture: and within each sect there is still a cleavage between the materialists and the mentalists (if I may coin a word)—between those who want to explain human affairs solely or primarily in psychological terms, and those who insist on a purely or mainly materialist interpretation of everything. There is not even agreement on the definition of *culture*, that central anthropological concept: some anthropologists maintain that culture is an abstraction, others that it is the sum of human activities, or the patterns of human behavior within a given society, still others that it includes all "artifacts, socifacts and mentifacts," to use Bidney's convenient terms for the different types of products of a culture or human society.[3]

A further confusion arises owing to a radical difference between psycho-social and biological evolution—first, the lack of any sharp distinction in the psycho-social sector between soma and germ-plasm; secondly, the presence of an increasing trend toward convergence superimposed upon that toward divergence. Culture, in the objectively definable sense which seems natural to a biologist, is at one and the same time both soma and germ-plasm, both a mechanism of maintenance and a mechanism of reproduction or transmission. This statement needs some minor qualifications, for instance, the system of material production is more concerned with maintenance, the educational system more with transmission. But the material objects produced and the skills that produce them also are directly transmissible (unlike the metabolic products and activities of the animal soma); and the knowledge and attitudes transmitted by education are also directly concerned with the maintenance of culture and the body politic (unlike the germ-plasm tucked away within the body organic).

This union of somatic and germinal functions in culture is another consequence of the new evolutionary mechanism available to life in the psycho-social phase—the mechanism of cultural tradition based on cumulative experience. This follows from the fact that cultural tradition depends on communication. Since communication occurs both extensively, in space, between contemporary members of a culture, and progressively, in time, between individuals of different generations, tradition and the culture arising from it inevitably combine maintenance and transmission functions—in other words, serve both as soma and as germ-plasm in the psycho-social phase of evolution. Furthermore, transmission may occur by diffusion of various sorts between cultures, as well as within single streams of culture.

---

[3] In some ways, the situations in anthropology recalls that of biology some fifty years back. Then we had the protagonists of comparative morphology contending with those of physiological analysis; the violent (but as it turned out unreal) quarrel between the biometrician gradualists and selectionists and the mendelian mutationists and anti-selectionists, the dispute between the ultra-materialistic and the ultra-psychological students of animal behavior; the curious preformationist theories of Bateson; the confusion between genetic determinant and character; the last stand of the Lamarckians and the vitalists against the advancing regiments of the mechanists.

Today, this confusion has been largely abolished, partly by the final disproof of certain views, partly owing to the reconciliation of opposing theses in a higher synthesis, and partly by a linking-up of separatist movements in a combined attack on a unified front. We may reasonably hope that anthropology will undergo a similar development.

The new basis and mode of transmission and transformation available to psycho-social evolution also has had important consequences for its course, notably in leading to a process of convergence. Man differs radically from all preceding successful types in not having diverged into numerous biologically separate species and lineages. An incipient divergence, based doubtless on geographical isolation, permitted the differentiation of *Homo sapiens* into what in biology would be called subspecies—the races of mankind, each physiologically adapted to its geographical habitat. But since most human adaptation and improvement is cultural, genetic divergence did not proceed farther, and was soon overtaken by the effects of genetic convergence, as man's expansive or migratory urges brought previously isolated populations into contact. Biologically, modern man has thus remained one species, a single interbreeding group.

However, the two complementary processes, of evolutionary divergence by increase of variety, and of evolutionary advance marked by improvement in general organization and leading to the emergence of new successful types, have continued to take effect in the psycho-social sector, but in the domain of culture. Evolutionary advance, or general improvement in organization, has in the long run been of decisive importance. As in the biological phase, major advance proceeds by large steps, each marked by the spread of the successful new type of organization. Among obvious examples are the discovery and spread to agriculture, of urban civilization, of alphabetic writing, of monotheism, and of science as a method of understanding and controlling nature.

The complementary process of divergent cultural evolution has always been a striking feature of man's history, and was markedly accentuated in its later stages, after the advance to the level of urban civilization. We need only think of the range and variety of cultures in the ancient world—Sumerian, Egyptian, Indus Valley, Hittite, Assyrian, Phoenician, and the rest. On the other hand, the same unique trend toward convergence after divergence, seen in the genetic make-up of man, operated also in his cultural evolution: the main difference is that in the human type a much greater degree of cultural than of biological divergence took place, and that the degree of unity produced by cultural convergence is still far below that reached on the genetic level. Whereas biological convergence must be achieved by physical interbreeding of divergent types, cultural convergence operates by various forms of culture-contact and diffusion, and ultimately is based on the same specifically human mechanism of shareable and transmissible tradition and communication as is the development of culture itself.

With this preliminary clearing of the air we are now in a position to analyze cultural evolution in more detail. I must first justify the view that what evolves in the psycho-social phase is not the genetic nature of man, or individuals, or society, or minds-in-society, but a new supra-organismic entity, demanding an appellation of its own. *Culture* is the appellation by which anthropologists denote this central subject of their science.

Culture, if I understand it aright, is a shared or shareable body of material, mental and social constructions ("artifacts, mentifacts, and socifacts") created by human individuals living in a society, but with characteristics not simply explicable or directly deducible from a knowledge of the general psychological or physiological properties of human individuals, any more than the characteristics of life are simply explicable or directly deducible from a knowledge of the general chemical and physical properties of inorganic matter, or those of mind from a knowledge of the properties of neurons. Culture has a material basis, in the shape of resources of food, raw materials, and energy; but though the quantity and quality of material resources available will influence or condition the character and development of a culture, they do not determine it in detail, so that differences between cultures are no more explicable or deducible from a knowledge of their material basis than from that of their psychological basis in the minds of individuals.

In describing and analyzing a culture, we thus need to distinguish a number of distinct components. First, the material or resource basis; secondly, the basis of communication or language; thirdly, skills and techniques; then the material objects and other products constructed with the aid of the skills and techniques, including tools and machines, dress and adornment, buildings and vehicles, and works of art; then systems of social organization, including kinship and marriage systems, law, political and economic systems, administration, and status systems such as class and caste; then knowledge systems, including education, science, and higher learning; and finally attitude systems, ranging from manners to religions, and including personal and social ethics, taboos, and rituals.

But the mass enumeration of cultural components is obviously not enough. We must also undertake the analysis of culture as a self-operating and self-reproducing system. Here, the best method of approach would seem to be the functional one, analogous to the broadly physiological approach in biology. How does a culture work? What operations and functions must it perform, and how and with what organs does it do so? The chief alternative is the structural or morphological approach, analogous to the method of comparative anatomy in zoology. This is obviously necessary as a first step, but can and should be incorporated in a broad functional analysis. It is dangerous when utilized to the exclusion of the functional approach, or as dominant to it, for it inevitably gives an incomplete picture.

The dangers of over-emphasis on the structural approach are evidenced by the history of zoology. As Radl wrote in his *History of Biological Theories* (1930), many zoologists in the late nineteenth century were so busy comparing one structure with another that they forgot to ask what the structures were or did. The first effect was the growth of a forest of largely hypothetical (and we may add also largely sterile) family trees; the second was a compensatory over-reaction in favor of physiology and experimental analysis. The next step was an attempt at reconciling purely structural anatomy with purely experimental physiology in the concept of the organism as a working or functioning whole; and the final result has been the development of an all-round approach (as evidenced, for instance, in J. Z. Young's recent *The Life of Vertebrates*), in which comparative anatomy, though still basic, is treated functionally so far as possible, physiology has become broadly comparative, and both have been combined in an ecological-evolutionary approach.

I feel sure that a similar synthesis or reconciliation will take place in anthropology, though the details of the process will be different—for instance, the comparative anatomy of structural patterns is much easier to study in zoology than in anthropology, while the reverse is often true for the analysis of function.

Let me now return to the problem of culture and its investigation. Culture in the broadest objective view appears *sub specie evolutionis* as a self-maintaining system or organization of intercommunicating human beings and their products, or if we wish to be a little more precise, of the results of the intercommunication of the minds of human individuals in society.

Though a culture thus depends on individual human beings and their psychological activities, its characteristics, as I already have emphasized cannot be deduced from theirs. The intrinsic (genetic) psycho-physical properties of the human population of a society, and the intrinsic peculiarities of single individuals within it, can and do to some extent condition the form and development of the culture, but do not determine it. In fact the boot is on the other foot, or at least the emphasis is the other way round: the effective (or in biological parlance the phenotypic) characterization and achievements of human beings in a society are to a very large extent the result of the pattern of culture in which the human individuals live and the cultural forces which play upon them.

The studies of Kroeber on genius have shown that geniuses appear—that exceptionally gifted individuals are able to realize their talents effectively—not at a constant or even approximately constant rate in time, nor with a uniform extension in different areas, but in bursts; and these bursts are related to the stage of development of the culture into which the men of genius are born.

Meanwhile the work of Ogburn and Thomas, following up Kroeber's earlier studies, has demonstrated that the progress of scientific discovery shows a somewhat similar phenomenon: outstanding discoveries and inventions are often and perhaps usually made independently by more than one man at about the same date. Here again the determining factor appears to be the stage and type of cultural development.

This fact of multiple independent discovery is of course only a special, though outstanding, feature of what many thinkers have noted—the intrinsic momentum of science. Once a science has reached the stage of having a coherent theoretical basis, it will inevitably proceed (provided is not discouraged by authority) to make further discoveries and further extensions of its theory. It becomes, in fact, a quasi-autonomous cultural entity, an organization of facts, ideas, and practices which is bound to progress until it has exhausted its possibilities—in other words, has realized the implications of its theoretical basis.

Analogous phenomena are found in other cultural fields; for instance, the localized outbursts of masterpieces and the deterministic trends of style in the arts as in ancient Greek sculpture, or in European painting since the Renaissance; the development of Christian theology within the first millennium A. D., and of scholastic philosophy within the second.

Indeed, this "inner momentum" appears to be a general property of all cultural organs involving creative thought or activity. It results in what may be called trends of cultural evolution. These resemble the trends of improvement I have already mentioned in biological evolution, in an interesting way: both types of trend continue in the same general direction for a considerable period of time, until they reach a limit of some sort, when they become stabilized (and often enfeebled, reduced or extinguished).

The limit, when the biological or cultural system has "exhausted its capacities for development," "fully realized its possibilities," or however else we may describe it, may be determined either intrinsically, by the very nature of the evolving system or faculty, or extrinsically, through the interference of some other system, or by the operation of external forces. In biology I have given examples of these different types of limits, in the limitation of visual acuity by minimum size of visual cells; of size and intelligence in insects, by their tracheal system; and of accuracy of temperature-regulation in mammals by the efficacy of the forces of natural selection. I leave it to my anthropological colleagues to find comparable examples in cultural evolution.

I must add an important caveat. Some "culturologists," and some believers in economic or social determination maintain that individuals as such play no part in moulding human history, but are wholly moved by superorganic social and cultural forces. However, while it is clear that the "great man" theories, according to which single individuals are responsible for all or most of the decisive advances and regressions, turns and twists of history, cannot possibly be upheld, neither do the facts warrant the extreme opposite view.[4]

Indeed, it is one of the uniquenesses of man that in him the broad trend toward individuation and the greater importance of the individual organism and the individual event, which characterizes evolution in general, has reached and passed a critical point. In the inorganic phase, differences between individual atoms and molecules are submerged in the statistical behavior of aggregates. In biology, individual events such as mutations produce the differences between individual genes which provide the basis for evolutionary improvement; and in higher animals, notably birds and mammals, selection operates largely on the differences between the highly individuated single organisms within a species, though the operation is still on a statistical basis. But in man, individual differences no longer are wholly submerged in statistical processes, and the behavior of single individuals may affect the course of psychosocial evolution. Thus, while the Mongols would assuredly have become an important organized power in the Middle Ages, the extent of that power would certainly have been less and its form different if it had not been for Genghiz Khan; and similar considerations apply to the influence of Napoleon on the development of post-revolutionary France.

The importance of individuals is perhaps most clearly evident in the arts, for it is of the essence of a great work of art that it should be individually unique. In Italian painting, for instance, while inescapable cultural forces were influencing a high percentage of talented men to become artists, and were producing overall trends of style, it is the masterpieces of individuals which have been of decisive value for man and his cultural evolution. Although in a different culture, such as that of modern America or Russia, Giotto and Titian, Michelangelo and Leonardo quite likely would not have become artists, and certainly would have painted quite different kinds of pictures, the fact remains that if these particular individuals had not existed, not only would the world be a poorer place, but the history of art would have been different.

Since scientific discovery is a cumulative process, and since it concerns objective fact, the distinctive role of individuals is not so marked in the sciences as it is in the arts, and simultaneous discovery is not infrequent. All the same, it is difficult to believe that the advance of science would have been so speedy, or indeed quite the same, without individuals like Newton or Einstein. Even where independent or simultaneous discovery has occurred, the actual contribution or effect of one individual may be much greater than that of the others. Thus Wallace hit on the theory of evolution by means of natural selection independently of Darwin; yet, for various valid reasons, we can be certain that the advance of biology into its evolutionary stage would have been both slower and different if Darwin had not existed.

An example which illustrates both aspects of the relation between individual and culture is that of particulate inheritance. As is well known, Mendel discovered and published the basic facts of this and established its elementary laws. But the development of science as a cultural process was apparently not ripe for their acceptance, and his discovery remained ignored until it was re-made independently by these workers thirty-four years later. Only after this did Mendel become recognized as the founder of the science of genetics.

Here I must make a brief methodological divagation. The *method of approach* to any scientific problem is clearly of extreme importance, and will to a large extent determine the type of discovery made. Putting the matter the other way round, the method of approach is itself largely dictated by the type of answer you want to obtain: it is, in fact, a kind of question. Furthermore, the question will alter with time and the progress of discovery: when one method has yielded the main crop of answers that it could be expected to provide, it is time to ask another kind of question, by adopting a new method.

---

[4] Even Plekhanov (*The Role of the Individual in History*, International Publishers, New York), while upholding cultural determinism in general ("For a great man, the general character of his epoch is 'empirically given necessity' "), admits the importance of the exceptional individual.

A biologist cannot suggest methods for anthropology to practice. What he can do, however, and what I shall here briefly attempt, is to summarize the various methods of approach adopted in biology, in the hope that anthropologists may be able to discover implications helpful for their own science.

The original approach inevitably was descriptive: biologists set out to describe as accurately as possible the variety of organisms and the phenomena which they exhibit. This approach is designed to answer the basic question, what are the facts?

The descriptive was soon supplemented by the comparative approach. This was first focused round the question of grouping or classification. What pattern or system of characters does an assemblage of organisms have in common; and, arising out of this, what distinct types are there at various levels of characterization? This led to the classification of organisms in a hierarchical system of groups—species grouped in genera, genera in Families, Families in Orders, Orders in Classes, and so on.

Implicit in such a system was the idea of physical relationship. With the acceptance of the fact of evolution, this implicit postulate became explicit, and the question posed by the comparative method became correspondingly altered; behind common patterns, men were reaching for common origins. The result was a phylogenetic classification, a classification intended to express evolutionary descent and relationships as well as a convenient pigeon-holing system. The animals placed in the Order Carnivora, for instance, were so classed because they were all presumed to be descended from a single common carnivore ancestor; and a common mammalian ancestor was postulated for them and all the other Orders placed in the Class Mammalia.

However, while common ancestry accounted for the shared resemblances of a group, the problem of the differences exhibited by its members remained. For this, a new method of approach was needed, a method which we may call that of differential analysis. It asked the question, what is the cause of the differences between the members of a related group? The method has been most successfully (because most easily) employed in analyzing the visible differences between minor varieties of a single interbreeding population, and demonstrating that those which were heritable depended on differences in one or more hereditary unit-factors, later called genes. The modern science of genetics is built on this, the mendelian method, of analysis after crossing.

When the different forms are populations inhabiting geographically different areas, such as two geographical races or subspecies of one species, extrinsic factors also must be taken into account. In such cases it is found that their differences, though due genetically to differences in their intrinsic genic make-up, also have a historical component, which is correlated with the geographical or ecological difference in their habitats, and with the degree and duration of biological isolation between them. The differences are thus the result of an evolutionary process of divergence requiring time.

Finally, when the different forms cannot be interbred to yield a fertile cross, as occurs between different species or higher taxonomic categories, the genic factors involved in producing the difference cannot be experimentally discovered, and only can be partially deduced through analogy and other comparative procedures. In such cases, where experimental crossing is impossible and the number of causative factor-differences is large, special methods of multivariate analysis may be required to give satisfactory results.[5]

However, there are limits to the usefulness of such differential analytic method. Mendelian analysis, for instance, tells us that a *difference*, say in flower-color between two varieties of plant, is due to a *difference* between two genetic factors or genes.[6] But it tells us nothing, or at least nothing worth knowing, about what the genes *are,* or of how they work.

---

[5] See, e.g., Stroud, C. P., 1953, *Systematic Zoology* 2, p. 76.

[6] Strictly speaking, two *alleles*, or forms of one kind of gene.

To obtain answers to such questions we must utilize other methods of approach—constitutive as well as differential, integrative as well as analytic. By constitutive I mean an approach involving questions as to the constitution or nature of what is being investigated; and by integrative I mean one which attempts to comprehend the interrelationships and total pattern of a system of analytically detectable components.

In regard to genes, constitutive inquiry has already shown that they are portions of chromosomes, that they consist of a certain kind of nucleic acid in association with proteins, and possess a molecular structure permitting binary multiplication by self-copying. And the integrative approach has led to the concept of the *gene-complex,* a system of interrelated units with mutually adjusted interactions. For the problems of complex yet unitary patterns, *Gestalt* and other similar approaches are required, and non-quantitative mathematical formulations of patterned systems are being attempted.

The constitutive approach soon demands vectorial diachronic enlargement, by the addition of a directed time-dimension. We then ask questions about processes—how does a given initial state of things become converted in time into a different state? In genetics, for instance, we try to unite gene and character by considering them as the end-points of a single chemical and physiological process or chain of processes—and in the case of micro-organisms are already meeting with considerable success.

Similarly, once we have introduced a historical component into our study of differences between taxonomic groups (subspecies, species, and higher categories) and have arrived at the conclusion that evolutionary divergence has been at work, we inevitably are impelled to ask what trends are involved, what is their shape and their direction, how do they operate, and how do they produce their observed results? This approach, in the hands of men like Simpson and Ford, Mayr and Dobzhansky, is already giving us interesting answers in terms of the effects of natural selection in different circumstances—adaptive improvement, minor nonadaptive diversification, trends of specialization, parallel evolution, limits to improvement, stabilization, and so forth, so that we are beginning to work out a science of evolutionary processes.

The evolutionary biologist, fortunate in the more mature stage of development which his science has reached, perhaps may be permitted to suggest some lines of study to the anthropologist.

In the first place, an evolutionary approach seems to me essential. We shall never fully understand human culture unless we look at it as a portion of the evolutionary process—both a product of past evolution and an agent of possible future evolution.

I want to emphasize once more that, while none of these methods of approach by itself was able to give any but very partial answers to the central problems of biology, all made necessary contributions to our present understanding; and that the great and sudden advance registered in evolutionary biology during the past thirty years has been due primarily to the synthesis of many previously separate (and indeed sometimes arrogantly separatist) lines of inquiry.

The evolutionary approach in anthropology has been bedeviled by false starts and false premises—notably the erroneous idea that biological evolution could be represented by a single straight line of inevitable progress, and the Comtian conversion of this into an evolutionary strait-jacket for culture.

When anthropologists realize the fact that evolution always involves divergence as well as advance, stabilization as well as improvement, and when they have reached a fuller understanding of the mechanisms of cultural maintenance, transmission, and transformation, we may reasonably forecast a broadly similar course for anthropology, including the prospect of an eventual triumphant synthesis.

If anthropology is a science, then for anthropologists culture must be defined, not philosophically or metaphysically, nor as an abstraction, nor in purely subjective terms, but as something which can be investigated by the methods of scientific inquiry, a phenomenal process occurring in space and time. The process has subjective as well as objective components, but both of these can be studied naturalistically. As a naturalistic and operative entity, the culture of a given society cannot be understood merely as the sum of the behavior and products of the individuals comprised in the society. It is composed of super-individual patterned systems of activity, potential as well as actual, all to a certain degree unified in an overall pattern of integration. In this general respect, cultures inevitably resemble organisms, although in particulars they show many differences.

In any scientific attempt to study and understand cultures, it is the patterned systems that are important and significant, rather than the individual activities in which they issue. Thus in human communication, Cassirer cites de Saussure's distinction between *la langue*—the super-individual system of grammar and syntax—and *la parole*—the actual words or way of speaking used by particular individuals. We find the same distinction in every cultural activity—in law, between the legal system of rules and precedents and its specific application in particular cases; in art, between a style and the individual works of art produced; in social structure between a system of local government, say, and the actual work of local bodies; in science, between a comprehensive theory and the mass of phenomena which it ties together; in kinship relations, between the theoretical system and the way it works out—or does not work out—in everyday life; in morality, between the system of tabus or ethical injunctions and individual moral actions.

Further, we observe that a cultural pattern-system may be either latent or patent, either needing to be deduced from the individual phenomena or already consciously formulated by the culture. As is to be expected *a priori*, conscious formulation is usually a later development; thus all languages are highly complex systems, but it is only late in human development that the system is consciously formulated in rules of grammar and syntax; and theories of aesthetics do not emerge until after millennia of the practice of art. Even where some conscious intellectual formulation exists *ab initio*, its extent and its precision in general will increase with time. Thus, in religion there is the development from fluid and non-rational myth to precise and highly rationalized theology; while science grows from a mere recognition of empirical regularities into an elaborate system of theories and laws capable of increasingly precise mathematical formulation.

This increasing patency of cultural pattern-systems in psychosocial evolution is analogous to the increasing differentiation of functional organic systems in biological evolution. An Amoeba has no visibly differentiated systems of support, locomotion, circulation, digestion, conduction, sense-perception, or reproduction; among Metazoa, a separate circulatory system did not appear until the Annelid level of organization was reached, a temperature-regulating system not before the later Mesozoic: sense-organs such as eyes and ears show a steadily increasing degree of differentiation and also of precision: behavior-systems become more differentiated (with greater variety of instincts), and at the same time more flexible and precisely adjustable (with the development of learning capacity).

But since biological evolution depends essentially on the self-reproduction of matter, and cultural evolution on that of mind, it is inevitable that the differentiation of organic functional systems will be manifested in increased material specialization, that of cultural systems in increased mental specialization—that is to say, increasingly full, precise, and conscious formulation.

With these preliminary considerations out of the way, let me try to define and analyze the cultural process a little further. In the most general terms, a culture consists of the self-reproducing or reproducible products of the mental activities of a group of human individuals living in a society. These can be broadly divided into artifacts—material objects created for carrying out material functions; socifacts—institutions and organizations for providing the framework of a social or political unit and for maintaining social relations between its members; and mentifacts—mental constructions which provide the psychological framework of a culture and carry out intellectual, aesthetic, spiritual, ethical or other psychological functions.

The categories inevitably overlap, since all cultural activities have a mental component, all artifacts have been shaped by mind, all mentifacts have a material basis or vehicle, and all cultures are embodied in societies. Thus a piece of pottery may be both a useful artifact and a beautiful mentifact; socifacts like codes of law and morals incorporate much of spiritual and ethical mentifacts; and we all know how the intellectual mentifacts we call scientific theories and laws become transposed into technological artifacts. Nevertheless, the distinction is a useful one.

A more satisfactory analysis, however, is made possible by changing the basis of classification of cultural elements from origin to function. In such a teleo-functional view, we perceive that every culture has certain components. In the first place it exists in a particular material environment, and has a certain material basis. The environment does not *determine* the culture, but does *condition* and may *limit* it—for instance, through extremes of climate, or the prevalence of debilitating disease.

Secondly, the material basis, though by no means the sole determinant of culture, has a still greater influence: it is not possible for a society dependent on hunting or food-gathering to develop the kind of culture found in agricultural peasant societies, or for a pre-scientific society to develop the kind of culture found in technological civilizations based on machine-power.

Then all cultures are embodied in societies, and all societies must have a structure. Cultures therefore must include institutions and other social components. The most obvious of these are systems of kinship, law, armed forces, and administration, together with political and economic institutions on the one hand, codes of manners and social customs on the other. Functionally, they may be classified into those which subserve the survival and well-being of the social unit as such, and those which regulate the personal relations of its members. Or, alternatively, they can be grouped under the heads of authority or custom. In addition, there is social quantity. The number of people included in a given social group, and still more the density of population, have a marked effect on the culture.

We also have the material components of culture (as opposed to its material basis). These include utensils, tools, buildings, vehicles, machines, manufactures, and industrial products. Functionally they can be simply classified according to the human needs and desires which they subserve—nourishment, health, shelter, clothing, enjoyment, adornment, communication, and so forth. The type of material production has repercussions on social organization: thus, industrialization has involved the supersession of guilds of artisans by trade unions, and the rise of the joint stock company and the giant firm or ring. It also has repercussions on thought and ideas.

But before proceeding further we must mention the function of communication. This is fundamental: all culture depends on communication between individuals and between generations. The basic cultural organ of communication is language, so that linguistics must always be a basic branch of anthropology. The effectiveness of transmission of communication is later enhanced by various inventions—writing, the alphabet, printing, telegraphy, radio.

Other methods of communication are provided by symbols, and still others by the various arts, notably poetry and drama (including the cinema), painting and sculpture, and in special ways by architecture and music. But with these we reach the last category of cultural components—those with primarily mental or psychological functions, as against primarily material or primarily social functions. For while language is the medium of communication, the arts provide mentifacts—organized constructions of significance to be communicated from one human mind to others.

Symbols like the cross or a national flag have an intermediate function. On the one hand they have a denotative function like words, and can serve in the same sort of way as do recognition-markings and other releaser patterns in animals; but, on the other hand, they can also function as vehicles of complex and multiple significance.

Mentifacts thus serve as the psychological framework of culture, the mental organs of man in society. They express awareness or experience in various organized ways—aesthetic and symbolic as well as intellectual—and communicate and transmit these organizations of experience to others. There appears to be no accepted term to denote these "awareness organs" collectively. As I have ventured to suggest elsewhere,[7] their function may be called *noëtic*, and collectively they would then constitute the noösystem.

In addition to symbols and works of art, the noëtic components of a culture include rituals and formal celebrations, beliefs and superstitions, mythology and theology, tradition and history, philosophy and science. They include the totality of accumulated and available factual knowledge as well as the organized formulations of knowledge provided by mathematics and logic, scientific theories, and philosophical ideas; and finally the assumptions and attitudes that characterize a culture, including the vitally important epistemological premises on which its thinking is conducted.

Such an analysis of culture is essentially static. But the biologist is driven to view culture historically, as cultural evolution, and to see cultural evolution as a part, albeit a special part, with its own peculiar methods and results, of the evolutionary process as a whole. Once we adopt this approach, we cannot escape the conclusion that the most important characteristic of a culture is what for brevity's sake I have called its noösystem—the sum of its mentifacts, and the way they are organized.

Artifacts often give a readier characterization and indeed may provide the easiest or, in the case of extinct cultures, the only measures of classification; institutions and other socifacts express more simply the physiology of a culture—the ways of its social working. But its evolutionary position and possibilities are ultimately determined by the quantity and quality of its awareness and the modes in which it is organized.

From a slightly different angle, we find that a culture may appear as in large measure determined by its economic and material basis; or, as by Rousseau or in a rather different way by Marx, institutions may be regarded as barriers to progress set up by vested interests, which need only be destroyed for an ideal society of men to come automatically into being. Yet these again are but partial or short-term views. The existing material basis and economic organization of a culture depend on the utilization or application of past knowledge. Again, institutions and their forms—like a Church or a Monarchy, a Council of Elders, or a Civil Service—depend on human ideas and beliefs about human nature and about men's relations with each other and with the universe: and though they may become fossilized or corrupt and impede or resist progress, yet even if they were swept away, new institutional embodiments of human ideas and beliefs would have to be constructed to serve as the culture's social framework.

Once more, biological parallels are available. Description of physical structure—comparative anatomy—provided the readiest method of classifying organisms; and analysis in terms of mechanics, physics, and chemistry—comparative physiology—gave the simplest understanding of organisms as working mechanisms. Again, the material environment does in large measure determine the characters of its organic inhabitants—think of the contrast between the faunas of the deep sea and the surface waters, between the floras of the subarctic, the desert, and the humid tropics. Furthermore, what an animal type inherits from the past, in the way of genetically determined anatomy and physiology and behavior, conditions and limits its capacities in the present and its potentialities for the future. But the environmental determination is not complete, as is shown by the coexistence of high and low types in the same environments, or the evolutionary emergence of quite new types in an essentially unchanged habitat; and the limitations imposed by the framework of genetic structure cannot be transcended by abolishing that framework, but only by adaptively altering it. Further, comparative anatomy gives only a static picture, and comparative physiology only an immediate one. Fuller comprehension awaited their synthesis in the concept of evolutionary process.

---

[7] See my "Man's Place and Role in Evolution," in the Columbia University Bicentennial Conference, No. 5, The Unity of Knowledge. Père Teilhard de Chardin and others have spoken of the *noösphere* constituted by human culture, as opposed to the *biosphere* of organic life.

We can now obtain a picture of biological evolution as a whole. It is a process of deployment of self-reproducing and self-varying matter, directed by the forces of natural selection. It involves two main types of change—diversification and advance. Diversification connotes an increase of specialized variety. Advance connotes a rise in the upper level of organization, both of material physiology and of awareness: it involves the realization of fuller control or fuller exploitation of the resources of the environment, fuller self-regulation or independence of its arbitrary or hostile forces, and an increasingly comprehensive and increasingly accurate picture of its events and operations. From the point of view of life as a whole, diversification also represents an advance, for it means a fuller and more efficient exploitation of resources in favor of a larger and richer biomass. And diversification and advance taken together involve the emergence of new or fuller realizations in the self-reproducing material of life.

Thus biological relativity holds throughout the process of organic evolution, in that all organisms show adaptation—their genetic properties and capacities are adaptively related to the business of maintaining and reproducing themselves in their environments: if this were not so, they would have become extinct. Yet this temporary relatedness of immediate adaptation is in point of fact included in or transcended by a more inclusive and dynamic relatedness. We can and must also consider the relation of the organic type to the general process of biological evolution—a directional relatedness which takes account not only of its position in the process, but also of its direction of change, in relation to an increased realization of those possibilities of life concerned with a more effective exploitation of the environment, including a fuller awareness of the environment to be exploited.

In the psycho-social section, the same broad scheme of evolutionary relatedness still holds, but the process operates with different methods and with different principles of action. Once the cumulative transmission of experience was available, and accordingly mind as well as matter became capable of self-reproduction and self-variation, it was inevitable that evolution would take place overwhelmingly in the cultural rather than in the biological sphere, and with an enormous acceleration of tempo; and equally inevitable that the noëtic or mentifact system would be the most important part of evolving cultures.

With the aid of reason and imagination, cultures build up a volume of more or less extensive and more or less organized factual knowledge, together with resultant ideas and ways of thinking, and a system of more or less coherent and more or less conscious beliefs and attitudes, together with resultant values and purposes, which constitute the decisive long-term factors in cultural evolution.

In the long run, knowledge is the more important, because it conditions and modifies the beliefs and attitudes. Knowledge is potential action and potential control, both in the external material world and in the inner world of thought, valuation, and belief. Putting the matter somewhat differently, the mentifact system—in other words, the amount and organization of human awareness—is a mental microcosm, a system which internalizes the environment, more or less completely and more or less accurately, in men's minds.

Cultures, too, all show adaptation: if

they were not adaptively related to the business of maintaining themselves in their environments they would have become extinct. The result is cultural relativism—the fact that no cultural absolutes can be shown to exist, whether in the cognitive, the aesthetic, or the moral sphere. Insistence on the relativism of human values, especially perhaps moral values, has been very fashionable in certain circles. Just as the biological relativism of organic adaptation led some biologists to dispute the validity of distinguishing higher and lower types of organism, and so to deny the possibility of anything which properly could be called advance or progress in biological evolution, so the notable discovery of the cultural relativism of moral and other values has led a number of social scientists to dispute the idea that one culture can be *higher* than another, and so to deny the very possibility of advance in cultural evolution—in other words, of human progress.

However, as in biology, the adaptive relations subsumed under the head of cultural relativism are essentially temporary or immediate, and are transcended by a more inclusive and dynamic evolutionary relatedness. In this case, however, the properties of the culture (including the speed and direction of its change) must be considered not only in relation to the more effective utilization of its environmental resources, but also in relation to the more satisfying enjoyment, by its human members, of their capacities for experience and achievement, for knowing and feeling, willing and acting. The scale of culture thus has a dual measure: it is related not only to efficiency of exploitation but also to fulfilment of potentiality.

The overriding importance of knowledge—the cognitive portion of the mentifact system, concerned with the discovery, organization, and transmission of experience—for progressive cultural evolution is obvious as soon as we take a broad view. It was the capacity for cumulative transmission of experience which enabled animals to become men, and permitted our Pliocene ancestors to pass the critical point between biological and psycho-social evolution and to open the path toward human evolutionary dominance. All the major steps toward greater efficiency of material exploitation or of social organization, and toward alleviating or improving the human lot, have depended on increases or improvements in knowledge of some sort or other.[8] The improved knowledge may be in the form of skill, as revealed by the slow improvement of tool-making technique in the Lower and Middle Paleolithic. Or it may be constituted by an empirical discovery, like the discovery (doubtless fully realized only during a span of many generations) of agriculture, which initiated an entirely new and higher level of cultural organization, or it may be an invention concerned with the transmission of experience, like writing, printing, or radio. Or it may be in the form of an improved organization of knowledge, experience, as in ancient Greek philosophy, or in the comprehensive world-picture organized by Christian theology. Or it may be pure scientific discovery, with immediate applications, like the discovery of bacteria and its application to the treatment of infectious disease; or pure scientific discovery without immediate practical application, but with the effect on man's world-picture and his view of destiny, like the discovery of the fact and mechanism of evolution. Or, finally, it may be in the form of a new and improved organization of assumptions and methods of approach, as in the adoption of scientific method in field after field of inquiry during the past three centuries, with simultaneous abandonment of magical assumptions or explanations in supernatural terms.

Clearly, some of these advances are partial, and help to internalize outer reality only in a limited field, or with a very imperfect degree of accuracy. The most important for cultural evolution are those which open up possibilities of quite new modes of material existence (like the discovery of agriculture); which provide radical improvements in the mechanism of cultural transmission (like the invention of writing); which alter man's general approach to the intellectual and practical problems of life (like the adoption of scientific method); and above all those which lead to a new picture or model of human destiny (like the emergence of the higher religions, or the discovery of evolution). The effectiveness of such organizations of knowledge can be estimated by the degree to which they lead to the emergence of new types of cultural organization, comparable to new dominant types in biological evolution, which spread and increase at the expense of previous types of culture. Examples are afforded by the spread of Neolithic culture (based on agriculture), of civilization or urban culture (based on writing and division of labor), and, in recent centuries, of industrial and technological culture (based on scientific method in the natural sciences).

---

[8] I have avoided using phrases such as "steps toward cultural advance" or "human progress," in case I should be accused of begging the question. However, from what I have written above, it should be clear that cultural advance properly can be defined and estimated, though only in the rather complex terms of combined efficiency and fulfilment.

Those which involve a new picture of human destiny are the most comprehensive, and may include elements of all the others. They are, in fact, the true noëtic microcosms, and their importance can be estimated in terms of their relatedness to the overall process of reality. The more fully and the more accurately they internalize the evolutionary process, the more effective will they be, in the long run, the more valuable systems of potential action. To put the matter in the terms of my earlier treatment, the clearer man's picture of nature (including his own nature) and the fuller his understanding of his place and role in nature, the more efficient will be the resultant culture in enabling him to fill that place and to perform that role. Greater knowledge and fuller truth alone permit a correctly directed type of cultural change.

From this angle, the most important single step in cultural advance so far is that which we are now in process of taking—the application of scientific method to the problem of man's evolutionary possibilities. To start with, it markedly changes the directedness of culture, and may even reverse its sign. Most noëtic systems consciously or unconsciously look backward, are based on traditional authority or on a nostalgic belief in a prior Golden Age or state of perfection, and the cultures built on them are accordingly in large measure resistant to change, and especially to the idea of change.

A few noëtic systems have looked forward instead of backward, but usually to some millenary and final fulfilment. In so far as Imperial Rome had a conscious goal besides that of increased power, it was to impose the Pax Romana and the efficient Roman system on the rest of the world. Soviet Communism deliberately proclaims the classless socialist State as its inevitable millennial goal. But in so far as the goal is a final one, it imposes limits and it distorts the process of cultural change by imposing on it both the myth of an ideal but static end-state, and the dogma of authoritative truth. In Marxist Communism we can see clearly how the myth of an ideal final state has taken the place of the salvation myths of earlier religions, and how the authoritarianism of Marxist doctrine has impeded scientific and cultural freedom just as much as the Church ever did in the past.

The scientific method of acquiring truth and knowledge is free from these objections, since it explicitly recognizes that man's knowledge can never be complete or his truths absolute. But it does enable man to discover more knowledge and to arrive at a fuller approximation to truth, and so at once introduces a positive vectorial component into any culture which practices it.

However, so long as it is applied in a limited field (for instance only in the natural sciences), or is still liable to be overridden by dogmatic authority (as in Soviet biology in recent decades), it has no more than partial importance. It is only when a forwardly directed, positively dynamic ideal of cultural advance is combined with scientific method, or—what comes to the same thing—when scientific method is consciously adopted and prosecuted in all fields of human endeavor, it is only then that the noëtic system can begin to be a true microcosm, only then that cultural relativism in the narrow sense will become transcended by a more comprehensive relatedness, and cultural change will begin to adapt itself adequately to the overall evolutionary process of greater realization of inherent possibilities.

The capacity for the cumulative transmission of experience marked a critical point in the evolutionary process—the passage from a biological to a cultural mode of evolution. The attainment of a correctly related noëtic system will mean the passage of a critical point within the process of cultural evolution—from the proto-cultural to the full cultural phase, from mainly unconscious evolution to change consciously directed. And just as the passage of the former critical point permitted the emergence of man as a new dominant type, the psycho-social type, in evolution as a whole, so the passage of the latter will permit the emergence of a new and dominant pattern of organization within the cultural process, and will enable the psycho-social type to fulfil itself by relating its modes of change to its inherent possibilities. In other words, it will permit the full humanization of man within a continuous process of self-transcendence.

But I must not soar too far up into the clouds: the nöosphere has its earthy base, which it quits at its peril, and with which it must always keep vital contact. I will conclude with a re-statement (illuminated, I hope, by the foregoing analysis) of the evolutionist's view of human culture.

Biological and cultural evolution resemble each other in both showing a combination of two major trends, one to differentiation or divergence, the other to improvement or advance. In addition, cultural evolution shows a trend which is almost absent in animal evolution—toward convergence and consequently toward a final unity superimposed upon diversity. Both of these trends are subject to limitations, and in point of fact frequently reach final limits. In biological evolution, the amount of divergence possible to a group such as the teleost fish or the birds is limited by the variety of habitats or ecobiological niches which are available to their type of structural or physiological organization. It is, for instance, impossible for teleost fish to produce a type adapted to terrestrial desert existence, and equally impossible for birds to increase their variety by colonizing the deep sea. And I have already pointed out how most trends of improvement or advance eventually and inevitably reach a limit and become stabilized.

Occasionally, however, a biological lineage finds its way out of the limitations of its relatives of the same general type up to a new level of organization. Such major steps in advance are recognizable *ex post facto,* by the emergence of the lineage as the progenitor of a new dominant type, which demonstrates its dominance by its rapid development into a new fanning-out of combined divergence and improvement. This did not occur among either birds or teleost fish: they both appear to be incapable of breaking through their organizational limitations. It did occur, however, among bony fish as a whole, when one lungfish-like lineage evolved to the Amphibian level of organization capable of terrestrial life; even more strikingly, it occurred among the Reptiles, when one lineage of one of the numerous major divergent types of the reptilian radiation gave rise to the new dominant type we call the Mammalia, by reaching a new level of organization which combined hair and milk, and therefore the possibilities of temperature-regulation and of maternal care and family life. The other reptile lineages, though diverging to produce types as strikingly different as snakes and dinosaurs, tortoises and crocodiles, flying pterodactyls and whale-like ichthyosaurs, all remained on the reptilian level of organization, and have either become extinct or have persisted on that level up to the present.

This brings us to a further point. Biological classification aims at reflecting the facts of biological evolution. It is often assumed by zoologists that it does so by distinguishing groups according to their ancestry. Each taxonomic group, according to this view, is distinguishable because it is descended from one ancestral lineage. Thus, to go back to my earlier example, all species of weasels and stoats are pigeonholed together in the genus *Mustela* (and are capable of being so pigeonholed) because they are all descended from a single weasel-like ancestor; all families of carnivores are pigeonholed in the Order Carnivora because even such divergent creatures as seals, tigers, bears, and weasels are all descended from a single proto-carnivore lineage; all Orders of mammals in the Class Mammalia because their universal possession of hair, milk, and warm-blood is only comprehensible if they are all descended from a single proto-mammalian lineage with these properties.

Recently, however, it is becoming apparent that these taxonomic assumptions are fully valid only for a classification concerned with evolutionary divergence. Others are needed for a classification which also takes account of evolutionary advance. Thus G. G. Simpson in his *Meaning of Evolution* states that the latest and dominant group of bony fish "called Teleostei in formal classification," is "apparently a structural [and functional] grade" independently evolved by several lines; and this parallel evolution of improvements appears to be a common feature in smaller-scale deployments, like that of the horses (Equidae).

Actually, the idea of a common grade of improvement in place or in addition to that of a common ancestry is implicit in much taxonomic practice. Thus from the strict common-ancestry point of view, birds and mammals are parts of the great reptilian radiation, and should be classed as Orders on a par with other reptilian Orders like Crocodiles or Dinosaurs. However, they both developed such outstanding improvements in general organization that they became new dominant groups more varied and more abundant than any reptilian Order—the birds primarily in the air and the mammals primarily on the land. For this reason, they are called Classes, with new Orders as their major subdivisions. Both are actually monophyletic groups; but whereas this fact of common ancestry is the basis of our classification of other products of the reptilian radiation, in their case advance to a new level of organization is the decisive factor. *Aves* and *Mammalia* are grade labels as well as ancestry labels.

Sometimes, indeed, our taxonomy designates only grades. This would be so for Teleost fish if Simpson's views are confirmed. It was once so for the Subkingdom Metazoa, originally intended to cover all multicellular animals. Later, however, when it became clear that Sponges had evolved independently to the multicellular level, the zealots for ancestry classification placed them in a new Subkingdom, the Parazoa, leaving Metazoa as a combined grade and ancestry label for the rest of the multicellular animals.

I personally would like to see a new, evolutionary classification, which would combine the advance and ancestry principles. We would then have *groups* of common ancestry—Classes, Orders, and other familiar designations, and *grades* of advance (advance sometimes independently achieved, sometimes in common), for which new designations would have to be coined.[9] I would hope that *Metazoa* would be restored to its original use as a grade label, and that Man would be placed in a new major grade, which might be called *Psychozoa*.

Of course it is not the labels that are important, but the principles and assumptions on which the necessary labeling is done. I venture to suggest that the adoption of a broadly similar outlook would permit real progress in anthropology. The assumptions of principle are roughly these. That evolution still operates in man, but overwhelmingly as a cultural, not a biological process. That cultural (psycho-social) evolution shows the same main features as biological evolution. From one angle, short-term improvement ("adaptation") and long-term improvement ("advance") together with some apparently non-adaptive accidental and consequential results; from another, divergence (resulting in greater variety), advance (resulting in progressive improvement), and limitation (resulting in stabilization or regression); and from still another, less relativist and more comprehensive angle, a succession of dominant types, resulting in progress, as manifested by a rise in the upper level of achievement and an increased realization of possibilities.

---

[9] To take one example, Birds & Mammals, as separate ancestry groups, would continue to rank as two Classes, but would both be included in a single [illegible]

would include terms already in use, such as *Gnathostomata* for forms with jaws, *Tetrapoda* for those with walking limbs, and *Amniota* for those with a protective "private pond" for the embryo.

But finally, that cultural differs importantly from biological evolution in respect of selection and mechanisms of change, of transmission of the old and incorporation of the new, of the presence of diffusion and a consequent tendency to convergence as against divergence, of the immensely increased importance of mind and mentifacts, notably the accumulation and better organization of knowledge, and in many other ways.

If this were accomplished, the sterile controversies about cultural evolution (sterile because based on misconceptions) would be resolved; anthropologists would be able to see their subject in the conceptual framework of combined divergence, stabilization, extinction, and advance; they would reach a truer and more satisfying picture of cultural evolution than those provided by historians and sociologists like Spengler, Sorokin, or Toynbee; and they would open the door to a scientific theory of human progress, free from wish-fulfilment and over-optimism on the one hand, and from captious relativism and over-pessimism on the other.

By envisaging the problem of acculturation in the world of today as an inevitable accompaniment of the emergence of a new dominant cultural type, they could bring a new illumination to bear upon it; and by reminding politicians and administrators of the value of variety-in-unity—variety of cultural expression within a unitary framework of knowledge, ideas, and purpose, they could help to minimize the evil effects of the process and maximize its desirable results.

Finally, by insisting on the overriding importance of knowledge and its organization in the form of ideas, assumptions, and beliefs, they would ensure that anthropology would make a vital contribution to the march of history. By clarifying the role of man's ideas of destiny in cultural evolution, they would make it easier for man to achieve his destiny by fuller realization of his possibilities.

REFERENCES

Bidney, D.
1953 *Theoretical Anthropology.* New York: Columbia University Press. 506 pp.
Cassirer, E.
1944 *An Essay on Man.* New Haven: Yale University Press. 237 pp.
Childe, V. G.
1941 *Man Makes Himself.* London: C. J. Watts and Co., Ltd. 242 pp.
1951 *Social Evolution.* New York: Henry Schuman. 184 pp.
Coon, C. S.
1954 *The Story of Man.* New York: Alfred A. Knopf. 437 pp.
Huxley, J. S.
1942 *Evolution, the Modern Synthesis.* London and New York: Harper and Brothers. 645 pp.
1947 *Touchstone for Ethics.* New York: Harper and Brothers. 257 pp.
1949 *Heredity East and West.* New York: Henry Schuman. 246 pp.
1953 *Evolution in Action.* London and New York: Harper and Brothers. 182 pp.
1954 *Evolutionary Humanism.* Melbourne: Australian Institute of International Affairs.
Huxley, J. S. *et al.* (eds.)
1954 *Evolution as a Process.* London: Allen and Unwin; New York: Macmillan. 367 pp.
Kroeber, A. L.
1952 *The Nature of Culture.* Chicago: University of Chicago Press. 435 pp.
Kroeber, A. L. and others
1953 *Anthropology Today.* Chicago: University of Chicago Press. 966 pp.

MUMFORD, L.
1944 *The Condition of Man.* New York: Harcourt Brace and Co. 467 pp.
RENSCH, B.
1954 *Neuere Probleme der Abstammungslehre.* 2d ed. Stuttgart: Ferdinand Enke Verlag. 407 pp.
RADCLIFFE-BROWN, A. R.
1952 *Structure and Function in Primitive Society.* London: Cohen and West, Ltd. 219 pp.
SIMPSON, G. G.
1949 *The Meaning of Evolution.* New Haven: Yale University Press. 364 pp.
1953 *The Major Features of Evolution.* New York: Columbia University Press. 434 pp.
TAX, S. *et al.* (eds.)
1953 *An Appraisal of Anthropology Today.* Chicago: University of Chicago Press. 395 pp.
TOYNBEE, A. J.
1947 *A Study of History* (abridgement of Vols. I–VI). New York and London: Oxford University Press. 617 pp.
TURNER, R. E.
1941 *The Great Cultural Traditions.* New York and London: McGraw-Hill. 2 Vols.
WHITE, L. A.
1949 *The Science of Culture.* New York: Farrar, Straus and Co. 444 pp.

Part Two

Man's Past: Environments, Relics, Ancestors

Man's Past:
Environments, Relics, Ancestors

INTRODUCTORY 29

CHANGING MAN'S HABITAT: PHYSICAL AND BIOLOGICAL PHENOMENA
Paul B. Sears 31

PRIMATOLOGY IN ITS RELATION TO ANTHROPOLOGY
Adolph H. Schultz 47

FOSSIL MAN AND HUMAN EVOLUTION
Loren C. Eiseley 61

OLD WORLD ARCHEOLOGY AND PREHISTORY
Lauriston Ward 79

NEW WORLD CULTURE HISTORY
Gordon F. Ekholm 99

ARCHEOLOGICAL THEORIES AND INTERPRETATIONS
Emil W. Haury 115

CHRONOLOGY AND DATING PROCESSES
James B. Griffin 133

CULTURE HISTORY AND CULTURAL DEVELOPMENT
Christoph von Fürer-Haimendorf 149

DIFFUSION: TRANSMISSION AND ACCEPTANCE
Wilhelm Koppers. 169

Introductory

THE significant achievements of 1952–1954 in the growth of man's knowledge of his past—his environment, relics, and ancestors—are considered in nine essays which treat of methods, results, interpretations, and theory for those aspects of anthropology that emphasize historicity.

SEARS makes the point that man's physical-biological environment is itself highly evolved and specialized, and continually is undergoing change by means of processes independent of man. But the most rapid, extensive, and effective change at present seems to be that due to man's own activity, especially through the application of scientific knowledge. Among the environmental changes by man that Sears considers are the effects on vegetation, land use, soil erosion, forest regions, grasslands, water, atmosphere, and mineral resources.

SCHULTZ is concerned with the benefits which anthropology can and should gain from close cooperation with primatology. Recent contributions to primatology are in descriptive and comparative studies, taxonomy and phylogeny, growth and development, pathology, and behavior. The comforting old gap between the morphology of man and ape has practically disappeared with the latest fossil finds.

EISELEY reports that the Darwin-Wallace argument of nearly a century ago still is before us. Three times in the course of a year, scholars independently have inquired into the curious uniqueness of the human brain. The elimination of the Piltdown cranium has called for re-organization of thinking on human evolution. The major rise of the human brain in the Pleistocene seems to demand some other evolutionary mechanism than Darwin's "struggle for existence." If men, with all their cultural diversity are, throughout the world, so intellectually similar, how did they attain this status? The factor missed by Darwin and Wallace both was the societal nature of human beings—the basic innovation among all varieties of mankind was the production of the sociocultural world. The disparity between man and ape is great, not small—it is the disparity of mind.

WARD indicates that Old World archeology is emerging from a restorative, reconstructive period. Museums and schools have reopened, many journals have been resumed, and new publications begun. Ward reports on the meetings of several Congresses, on governmental activities, on UNESCO, and on archeological techniques and field methods. Outstanding pieces of field work are reviewed in a survey by periods, and by areas and countries. Lastly is considered the extent of America's contribution to Old World archeology, including the founding of the Council for Old World Archaeology. Activities in the Soviet Union are mentioned on pages 80, 81, 85, 86, 89.

EKHOLM supplies a guide to the recent literature on New World culture history. Particularly emphasized are syntheses of materials on an area or subject, new *trends in research and thought, and sizeable contributions of new data. General considerations of the New World as a whole are followed by summaries on North* America, Mesoamerica, and South America.

HAURY sees the emergence of trends in archeological theories and interpretations, changing concepts, and shifts in emphasis. There has been an increasing number of problem-conscious projects, and a shift from purely historical to functional interpretations. Among methodological advances in fields other than archeology, but of aid to it, lexico-statistical dating is singled out. Haury considers recent works on ecology and economy, and the Arctic and early man. Other notable advances are in the relation of archeology to ethnography and history, in trans-Pacific diffusion, in submarine archeology, and in epigraphy.

GRIFFIN pays particular attention to the considerable progress in radiocarbon dating—the establishment of additional laboratories and the improvement and variety of dating techniques. Comparison is made of the advantages and disadvantages of the various methods of radiocarbon dating: solid carbon, scintillation, CO_2 Geiger counter, CO_2 proportional counter, acetylene proportional counter, methane proportional counter. Techniques are being developed for the extraction of carbon by flotation and by acetone. Advances in radiocarbon dating are increased time depth, back 40,000 to 50,000 years, and increased precision of dates. Other technical advances reviewed are in geology, pollen analysis, chemistry, dendrochronology, paleography, and glottochronology.

FÜRER-HAIMENDORF finds the most significant trend in culture history to be the increasing dependence of ethnologists on prehistoric archeology. Emphasis is on cooperation in interpreting material from particular areas rather than world-wide generalizations. There is continued recognition of the significance of present-day primitive cultures, no less than of prehistoric cultures, as representative types of early forms of cultural life. Important works on the Americas, Africa, and Asia are reviewed, and a growing interest in the social and cultural problems of higher civilization reported.

KOPPERS links ethnology and prehistory to history proper. History in its wider meaning comprises the entire period of man's existence. The principle of diffusion is particularly important, but will not suffice to explain every historical development. Though research is based primarily on cultural parallels, there are no fixed laws in diffusion, either in transmission, or in acceptance or rejection. Graebner's and Schmidt's "Kulturkreise" have rightly been abandoned for quite some time, though their deductions should not be rejected wholesale.

PART Two on "Man's Past" is selective of those aspects of anthropology in which time-depth is of major significance. The other face of the coin, expressive of another stream of thought in anthropology today, deals with phenomena and processes that are expressly contemporary. "Man's Present: Human Activities, Societal Functions, and Cultural Processes" will be the Part Two of the next *Yearbook of Anthropology*.

Changing Man's Habitat: Physical and Biological Phenomena

PAUL B. SEARS

Dr. Sears is Chairman of the Conservation Program and Professor of Botany at Yale University, New Haven, Connecticut, and for 1953–1955 is also Chairman of the Department of Plant Science. He has been President of the Nebraska Academy of Science, Ohio Academy of Science, Ecological Society of America, and is President-elect (for 1957) of the American Association for the Advancement of Science. His present research interests are on Pleistocene vegetation, pollen analysis, and applied ecology. His works include: Deserts on the March, 1935; This Is Our World, 1937; and Charles Darwin, the Naturalist as a Cultural Force, 1950.

THE PHENOMENON OF CHANGE

MAN is the product of change. Unquestionably he has become a major agent of change. And environmental change may make him variously its beneficiary or its victim. Like the organisms which sustain him and those which are his rivals for space and sustenance, he has arisen by evolutionary change. The earth which he inhabits is an expression of geological change. And from change has developed the intricate pattern of biological and physical processes which, by orderly energy and material transformation, have made the earth habitable for him.

It follows, then, that change in the environment is important not only as it affects the amount and availability of materials used by man, but also in its influence on those processes and systems which, up to the present at least, have been essential to man's survival. Should he—or other agencies—disrupt them there must at the very least be set up to replace them other systems which guarantee the same results. Thus far such systems—e.g., hydroponics or soil-less agriculture—involve elaborate mechanisms far less resilient, far more vulnerable than those of nature. As Walter Pretzer of Cleveland, one of the nation's leading horticulturists, puts it, "I grow tomatoes under glass in water culture and out-of-doors as well. Things may go wrong in the field. If they do, I lose money. But when anything goes wrong with the hydroponic system, I lose not hundreds, but thousands."

So impressed are we by the technical efficiency arising from the application of science that we are likely to overlook the huge element of compounded risk which it involves. The hill people ("poor whites") of the Ozarks, with what Forrest Clements called "essentially a Neolithic culture" took the shock of depression during the 1930's in their stride, while shutdowns, bread-lines, foreclosures, and failures were prevalent in even moderately industrialized areas. Again there were times in the Korean campaign when enemy foot-troops, accustomed to the carrying of heavy packs, had the advantage over our highly mechanized forces, especially on difficult and trackless terrain. As a Scandinavian officer put it, "Americans are forgetting how to walk. Orientals are not."

The net effect of our present applications of scientific knowledge is to produce change, and the current emphasis of scientific investigation is such as to intensify this process. It would seem, however, that high priority should be given to the study of change itself and the analysis of its effects. At present, this is the concern of relatively few scientists, being otherwise dealt with by intuition and polemic. Considering their potential benefits to mankind, studies of the changing interrelations of life and environment are meagerly supported among scientific disciplines. This, of course, is explainable by the fact that the benefits of such studies are widely diffused and cannot as a rule be directly channeled into our economic system. But since the ultimate fate of that economy is involved, the neglect of studies of the effects of change is equivalent to having an elaborate industrial enterprise without a set of accounting controls.

MAN'S PLACE IN NATURE

To understand and measure change, it is first necessary to view man's place in nature. His flexibility as an organism is often emphasized, sometimes being referred to as his unspecialization. What is meant is his freedom from evolutionary characteristics that would sharply restrict his activities and choice of habitat. That he is highly evolved cannot be questioned. What is often overlooked is that he exists by virtue of an environment which is itself highly evolved and specialized, having become so in the course of more than two billion years of earth history.

The most obvious features of this specialized environment include the presence of an angiosperm flora—notably grasses and legumes—and a mammalian fauna dependent upon it. From these sources man is able to derive sustenance with an ease and efficiency that would have been inconceivable had he been surrounded only by organisms of the remote geological past. Less obvious is the presence of a complex population of micro-organisms and invertebrates which, among other functions, takes care of the breakdown of organic wastes and their return to chemical forms that can be reused to sustain life. Of major importance also is the persistence of numerous species of gymnosperms that, along with many kinds of woody angiosperms, furnish facilities without which man would have been severely handicapped throughout his existence. Indeed, that existence appears to have hinged upon trees, for his arboreal ancestors were obliged to develop the free shoulder articulation, grasping hands, and stereoscopic vision which serve him so well.

Least obvious, at any rate to modern urbanized man, is the effect of our present highly complex fauna and flora, organized as they are into communities, upon the environment itself. Through reaction upon habitat these communities not only insure an orderly cycle of material and energy transformations, but regulate the moisture economy, cushion the earth's surface against violent physiographic change, and make possible the formation of soil. In short, man is dependent upon other organisms both for the immediate means of survival and for maintaining habitat conditions under which survival is possible.

Man is also dependent upon minerals, his consumption of the two used longest, water and stone, still ranking first by volume. His present economy rests chiefly upon the use of fossil fuels and metals, both irregularly distributed and present in finite amount. The fossil fuels, once used, can only be restored by the slow organic and tectonic processes which formed them, while the use of metals results in the dissipation of the ore concentrations by which they have been made available to man. Their present convenient form, like the character of the organic world, is the result of prolonged earth history before the coming of man. Man is clearly the beneficiary of a very special environment which has been a great while in the making. This environment is more than an inert stock-room. It is an active system, a pattern, and a process, as well. Its value can be threatened by disruption no less than by depletion.

Any species survives by virtue of its *niche*—the opportunity afforded it by environment. But in occupying its niche, it also assumes a *role* in relation to its surroundings. For further survival it is at least necessary that the role not be a disruptive one. Thus one generally finds in nature that each component of a highly organized community serves a constructive, or at any rate a stabilizing, role. The habitat furnishes the niche, and if any species breaks up the habitat, the niche goes with it. The guest who helps with the chores may prolong his stay, but the inhospitable one may wreck the house. Systems or processes which involve organic activity resemble purely physical systems in being expressions of thermodynamic law, tending to approach a condition of minimum stress and unbalance. But since living systems are active and dynamic, they tend to approximate what is known as a steady state, rather than a condition of repose. That is, to persist, they must be able to utilize radiant energy not merely to perform work, but to maintain the working system in reasonably good order. This requires the presence of organisms adjusted to the habitat and to each other, so organized as to make fullest use of the influent radiation, and to conserve for use and re-use the materials which the system requires. The degree to which a living community meets these conditions is therefore a test of its efficiency and stability. This gives us a criterion by which the effects of environmental change can be judged.

While these principles have been shown to apply to what is generally called the world of nature, that is, the world apart from man, there is considerable resistance to the idea that they apply to him in any serious way. Much of this resistance is emotional, having its roots in that part of Judeo-Christian tradition which separates man from nature to a greater extent than perhaps was common in Oriental and Mediterranean thought. Some of it certainly comes from those who resent, for whatever reasons, any warning sign along the road to a perpetually-expanding economy. And surprisingly, perhaps, some resistance comes from scientists and technologists, especially those unacquainted with the general field that used to be called natural history. In defense of this last group it must be said that they are as aware of still unexploited reserves as the ecologist is of the existence of limiting factors. And in view of the fabulous results they have produced, they are perhaps less concerned with the law of diminishing returns than their colleagues, whose business it is to study the interrelationship of life and environment. As responsible scientists, both groups have an obligation to collaborate and to weigh scrupulously any pronouncements, whether these be cautions or promises. Mankind is not well served either by hysteria or false visions.

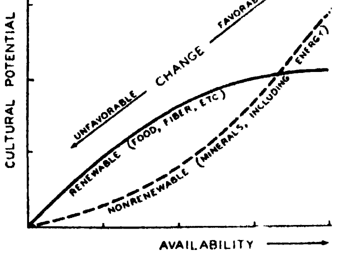

FIG. 1.—Per capita requirements of resources in relation to cultural potential (based on living standards).

CHANGE AND CULTURE

The significance of environmental change can be shown conveniently by a diagram (Fig. 1). This curve is based upon Megger's thesis (1954) that cultural potential rises with the quality of agricultural land, but differs in considering her class 4 as land of optimal, rather than unlimited, capacity. Limiting factors are always present. It is also based upon the fact that as the level of living rises, per capita consumption of renewable resources—nutrients in particular—rises with it but reaches a plateau. Consumption of minerals, both for energy and materials, continues to rise with living level, however. The consensus among technologists, even the most optimistic, is that this phenomenon is unavoidable. Any scheme for increasing the capacity of the earth to sustain human activity assumes the steadily increasing use of energy, the present source of which is largely mineral and non-renewable. This applies not only to the concept of expanding industrial technology, but to that of lifting the present limits on food-production as population increases.

Thus the diagram sums up in greatly simplified fashion some very complex ideas and phenomena. Water, for example, is involved in both segments of the curve, although it is classed as a renewable resource. It is one of the major limiting factors in the nutrient potential of the environment, but its increasing use in technology resembles that of other minerals. So, too, does the free oxygen of the atmosphere in industrial centers, the problem of both water and air being aggravated by contaminant wastes.

The diagram also serves to indicate the crux of the present controversy among resource specialists. One group (e.g., biologists and demographers) believes that the energy and mineral curve, like the nutrient one, must eventually become asymptotic. The other group (largely technologist) appears to regard it as a straight-line function, a view widely reflected as the unqualified notion of an expanding economy.

While the question of this extrapolation is of paramount importance in the formation of social theory and the consequent establishment of values, it is not our present concern. The latter is indicated by the arrows on the diagram, which are based upon tangible and measurable phenomena. Changes in the environment can and do definitely raise or lower the availability of components essential to our culture. Even if one maintains that the superabundance of material things is not essential to the highest culture, nevertheless man must eat to live, live to think and create, and have a reasonable amount of leisure and material security for any culture worth the name.

We address ourselves, therefore, to a consideration of the kinds of change which do affect man's environment and their effects upon his cultural activities of whatever sort. Some changes fall under the legal category of "Acts of God," as being beyond man's present responsible control. They may be physical, for example climatic, tectonic, and volcanic change, or biological—e.g., the evolution of new strains of pathogenes. But the most rapid, extensive, and effective change at present seems to be that due to man's own activity and therefore to be his moral responsibility, whether he can help himself or not. We shall consider first those changes for which he cannot be held accountable.

NATURAL CHANGES IN THE PHYSICAL ENVIRONMENT

Considering first changes other than climatic, the most spectacular are probably those due to volcanism or tectonic activity, both frequently being accompanied by earthquake. More general and consistent in operation is the process known as base-leveling, that is, topographic change whereby uplands are worn down and depressions filled. All three processes result in alteration of the surface form of the earth. Volcanism tends to be restricted to certain zones, and its effects, while violent, are generally local. Tectonic change and base-leveling operate more gradually, the effects often being unobserved during a lifetime, or even generations, so that human activity can be adjusted gradually to them. An important exception occurs when the process of base-leveling (erosion and deposition) is accelerated by man. This will be considered subsequently.

Finally there is climatic change. Of various degrees of intensity and duration, such change affects man primarily through its influence upon the other living organisms which sustain him. Their limits of tolerance are set by evolution. Plants and animals, unless domesticated or otherwise protected by man, cannot, to the same degree as man, adjust themselves to change through modified behavior.

Volcanism

Volcanic activity in populous areas may, through lava-flows, ash and cinder falls, or associated earthquake, cause severe disaster. People may be killed or rendered homeless. On the other hand archeological material of great scientific importance may be preserved, either at the cost of human life and urban structures as at Pompeii in 79 A. D., or through the sacrifice of tilled land, as at Copilco in the Pedregal south of Mexico City.

Ash-fall when severe may destroy vegetation. Frequently, however, it may bring long-range benefit through the renewal of nutrient minerals lost by rapid leaching in tropical regions. Thus in Indonesia, notably the island of Java, population is dense where there have been rather frequent ash-falls, but sparse where none has occurred within recent time.

Where volcanoes are still active, settlement must be looked on as a calculated risk, meliorated somewhat by improved means of prediction. An example is afforded by the fertile slopes of Mt. Etna. The sudden appearance of a cinder cone at Paracutin, while destroying fertile farmland, has been more than compensated for by increased revenue from tourism.

Tectonic Change

Uplift and subsidence of the earth's crust is ordinarily gradual in terms of human experience. Occasionally, as in the New Madrid earthquake of 1811 which formed Reelfoot Lake in Tennessee and altered the lower Mississippi, there may be accompanying disaster and changes in land use. The effect of tectonic earthquake upon land-use patterns is usually small as compared to the disaster to life and property. Estimates of death due to earthquakes during the past three centuries include such figures as 50,000 for the Lisbon quake of 1775 and 300,000 for the Indian catastrophe of 1737. For the Japanese earthquake of 1923, accurate figures are available: 99,331 killed, 103,733 wounded, and 43,476 missing. Fire following the quake is usually a major source of property loss.

The rise or fall of coast-lines may result in opening new areas to occupation, or in submerging those previously in use. The submergence and later elevation of the Temple of Jupiter Serapion on the Mediterranean shore is an example. In relation to the totality of land surface, such events are local. Uplift of the land north of the Great Lakes after removal of the weight of the Pleistocene continental ice-mass drained water from the northern shore of Lake Erie but caused it to encroach upon the south shore, as the tilting of a cup brings coffee to the drinker's lips while it exposes the raised inner portion of the cup. This tilting of the lake basin raised the water level on the south some thirty-three feet above the Nipissing low stage. To the west, from Toledo to Sandusky, this drowned the shallow estuaries of rivers that drain fertile lands, producing one of the world's richest fresh-water fisheries. East of Sandusky, however, the shore is higher, and here the encroachment of the lake has produced heavy erosion that is particularly costly in view of the heavy demand for recreational sites in this densely populated region. Thus the same phenomenon that has resulted in an increased food supply at one place has brought about destruction of property and loss of facilities needed by our present culture in another place.

One of the effects of steady or repeated mountain-building is the consequent erosion, by agencies next to be considered.

Base-leveling

Wherever differences in elevation occur, the forces of weathering and transport, operating under the influence of gravity, tend to reduce them by wearing down the hills and filling the depressions. The theoretical limit, seldom reached, is the condition of minimal relief known as the peneplain. As a rule tectonic activity renews the cycle before it comes to repose. Much of the world's most productive land is the result of base-leveling, valley alluvium being a familiar example. This may extend out into great deltaic deposits such as those of the Mississippi or Nile or expand as great outwash plains. Much of the Indian peninsula and our own Great Plains and western prairies, produced by the detritus from high mountain sources, are examples of such plains. Their fertility is proverbial, limited only by the amount of available water.

The rate of erosion in base-leveling is influenced by vegetative cover, which in turn, under natural conditions, is related to climate. So likewise are glacial transport and wind movement of materials.

Climatic Change

The general norm of geological climate has been considerably milder than the present, which may be regarded as still within the Pleistocene, or Glacial Age. Man is essentially a Pleistocene mammal and the biogeography of the present is largely an expression of the numerous advances and retreats of the Glacial Age. Human cultures have moved and changed and the associated organisms have shifted position in response to these movements and the correlative climates.

Since 1750, existing alpine and arctic glaciers have been receding and temperatures rising. These glaciers developed during the early part of the Christian Era, a time generally moist and cool. Earlier, there was an extended interval marked by warm dry vegetation and the development of forests in Alaska, which were overridden by the subsequent glaciation.

The limits of this warm dry period are uncertain, but it evidently included the dates of 1500 B. C. and 500 B. C. The extension of Neolithic agriculture into the Baltic area and of high maize culture into the upper Mississippi and Ohio valleys took place during this interval. The drier forest types then prevalent were amenable to clearing by stone and fire. The subsequent moist period produced marshes or fens in Europe and may have facilitated the advance of forest cultures in the Ohio valley at the expense of the agricultural moundmakers. Minimum lake level in the Basin of Mexico toward the end of a long dry period around 500 B. C. marked the transition from the Archaic lake culture to the upland Teotihuacan. Nahua lake culture once more appeared during the humid period around 800–900 A. D. after the water level had risen. Current dating suggests that the pre-Christian dry interval may have favored Mayan occupation of the later more humid, tropical forest regions.

Complications come into the record because of severe fluctuations within these longer moisture trends. If one examines a continuous record of any climatic factor—temperature or moisture especially—he will be impressed by the fact that its only contact with the line of normality is to cross it at intervals. Thus wet years tend to come in groups and so do dry ones. For this reason it may happen, during a long period of relatively favorable climate, that a group of unfavorable years ranging from two to ten in succession will disrupt cultural activities in marginal regions. This is the explanation advanced for pueblo abandonment at Bonito in the thirteenth century. It is also suggested as the driving force which more than once has led to the incursions of pastoral raiders into civilized territories, and is clearly documented for the considerable exodus of dry-land farmers during the drought of the 1930's in our own country.

On the other hand, long general trends such as those associated with glacial advance and retreat will shift the positions of marginal zones and those of the appropriate human cultural activities.

ENVIRONMENTAL CHANGES PRODUCED BY MAN

Changes by man, sometimes referred to as man's reaction upon the environment, now surpass in extent and intensity the various kinds of natural change just reviewed. As demonstrated by Marsh, man has become a major agent of geological change. Marsh further showed that the kind of change produced by human activities very often, if not always, works to man's own ultimate disadvantage. This thesis, although of the greatest practical significance, was long neglected except by those concerned with a particular natural resource, such as forests or wildlife. Since the nineteen-thirties, however, a considerable literature has appeared, much of it fairly well documented. The general trend of this writing is to show that man has in the past lowered and is now rapidly lowering the long-time potential of the landscape to sustain him. This condition is attributed in part to sheer pressure of growing populations, in part to inefficient patterns of land use, and in part to the powerful applications of science in a technology not much concerned with its ultimate consequences.

To this thesis there have, of course, been rejoinders, the most impressive of them based on the premise—and promise—that technology will in the end be able to solve problems as they become really serious. Before considering the merits of the controversy, it is in order to examine the record.

Man's Influence on Vegetation

How much effect man had before the origin of agriculture and pastoral life is not known. The incidence of fires, even during the hunting stage of economy, must certainly have increased. Man is known to have hunted Pleistocene mammals, for example, the mammoth and the bison. The mammoth, horse, and camel evidently became extinct in the Americas after man's arrival there.

Human influence on vegetation registers in many pollen profiles through the abrupt appearance of certain weeds, notably composites, amaranths, and chenopods. These multiply when the natural cover is destroyed and show up in pre-human pollen profiles following volcanic activity or erosion due to tectonic change. The chenopods are still used for food; thus they may be regarded as precursors of agriculture. Of especial interest is the recent evidence of their appearance during the second interglacial, in association with artifacts of pre-Acheulean age.

Agriculture requires the removal of native vegetation, while pastoral life is sustained by such vegetation. The effectiveness of stone tools and fire in clearing the drier types of forest has been strikingly demonstrated by Iversen's recent experiments. This milpa system consists of clearing patches and using them until the yields decline, then abandoning them and moving on—a process not particularly harmful until the increasing pressure of population extends the system to the hills and shortens the cycle needed for the vegetation and soil to recuperate. Erosion then follows.

Similarly, so long as a pastoral economy has sufficient space to permit nomadic life, the grasses and other herbs which sustain it can recuperate between periods of heavy use. Moreover, the pastoral cultures tend to be somewhat more aggressive than the legend of Abel and other "gentle shepherds" would suggest. One cannot doubt that primitive herders knew good pasture when they saw it and took vigorous measures to prevent undue trespassing. Even so, the growth of population brought steady pressure on the world's natural grasslands. Under such conditions, the floral composition of these grasslands is modified and less nutritious species come in as weeds. If the pressure continues, and particularly if it is extended to arid or hilly land, erosion by wind and water ensues. All of these effects are intensified and extended to forest country when goats, valuable as they are to man otherwise, are present in great numbers. The goat is a thin-lipped, destructive grazer, as is the sheep, but, to a greater extent than sheep, he is a resourceful browser, damaging to woody vegetation.

Changes in Land Use

With agriculture, urban life and the leisure arts and crafts became possible. Repeatedly in human history, this appears to have thrown the art of husbandry and the importance of good land use out of perspective. Except perhaps in China, the status of the man who worked the land was gradually demeaned as cities grew in size, power, and prestige. The effect of such change on the quality of rural techniques was probably bad, and the effect on the land itself, intensified by increasing food demands, was clearly so.

Two aspects of the growth of cities were particularly important. One was the expansion of irrigation works, the other, the harvesting of timber for fuel and structural purposes, thus clearing land not needed for, or suitable to, agriculture. Early irrigation in both hemispheres seems to have been well engineered, probably because the irrigators of arid lands had the stark choice of doing a proper job or being eliminated.

Where such irrigation depended upon wells, these afforded a positive check upon expansion, and an equilibrium of land use was reached which persisted in parts of the Near East for millenia, only to be broken by the growing cone of depression of the water-table incident to modern pumping for water used in oil refining.

Important irrigation works of great antiquity, notably in Mesopotamia, were based on the use of streams arising in forested uplands. Here, the clearance of forests, no doubt followed by heavy grazing, stimulated erosion. Vast amounts of silt were washed down so that increasing labor had to be used for the clearance of the otherwise excellent system of irrigation ditches. While it is true that this interfluvial culture persisted long after the empires which it built—until its ditches were wrecked by Mongol invaders during the thirteenth century—the immense piles of silt alongside the ditches show that the system was well on the way toward being choked out before it was destroyed.

It is in the world of today, where industrialization and death-control have produced an explosive growth of population, that land-use problems have become most acute and dramatic. Man has long competed with other forms of life for space. Increasingly he is his own competitor—a situation made worse by the diversity of his interests as they affect land use. Residence, business, industry, transport, waste-disposal, water supply, agriculture, forestry, military needs, recreation—not to mention many intangibles—all have intensified their rival claims, frequently upon the same limited area. The effect has been confusing almost to the point of disaster, as can be seen in any metropolitan "urban fringe" area.

Allocation of space by planning and zoning, while not a new idea, has been outlined on a scientific basis by Geddes and his followers. It has been rather effectively developed in Great Britain by Stamp and others, and in some parts of Western Europe. But in Holland where it is extremely advanced, it now faces the crisis of a saturated population. In the United States it faces grave political obstacles, made worse by the fact that we do still have a margin of safety, and by the prevalence of our conviction that an economy can continue to expand without limits. This of course runs counter to the scientific experience that the factors in any process must ultimately work toward some kind of equilibrium. This principle, so widely applied in the purely physical sciences, seems to be as widely ignored—or disbelieved—when it comes to land use. A curious and dangerous phenomenon in a technological culture!

Soil Erosion

It would be misleading to say that man is the cause of erosion, or that erosion *per se* is a bad thing. As pointed out previously, it is a normal part of the natural process of base-leveling and has been the source of some of the richest alluvial terraces and plains on earth. But under natural conditions, and except in very arid mountainous regions, the rate of erosion is controlled by the presence of vegetative cover in the form of stable communities. Under these conditions, erosion proceeds so slowly as not to interfere greatly with the normal process of soil formation, which, in turn, is a resultant of the interaction of living communities with the physical environment. It is when this natural cover is removed *without providing a substantial artificial equivalent* that the rate of erosion is accelerated to a dangerous degree.

Where this occurs, soil is removed from the uplands and the rich alluvium of the lowlands is buried, first by upland soil, later by the sterile mineral materials which have underlain the upland soil. In either instance, the productive capacity of former surfaces is greatly reduced even where, as in sheet erosion, the surface form is not much affected. But sheet erosion, if not checked, rapidly passes into gullying, which destroys the previous topography and renders it difficult to use.

Forest Regions

Because forest regions are usually well supplied with water and, at first, with fuel and building material, they often become heavily populated. But it is a characteristic of forest soils that the most fertile organic layer of the surface is shallow, thinly overlying a mineral layer from which the plant nutrients have been largely leached. This kind of soil profile under pressure of use rapidly loses its productivity; the result is likely to be extensive abandonment. This explains much of what happened in New England, which was under extensive cultivation in the early nineteenth century, later largely changed to pasture, and is today two-thirds in forest of such inferior quality that it yields less than ten per cent of the total rural income.

The situation is less serious where, as in Ohio, the minerals in the deposits brought in by glaciation are rich in nutrients and fairly deep. Here it is possible, through the use of cover crops and improved pastures and woodlots, to stabilize the surface and tap the underlying minerals, thus restoring the fertility lost when the original top-soil was removed. In Western Europe, where relief is low, rainfall gentle, and where economic pressure has enforced good husbandry, damage from removal of the original vegetation is relatively slight. Except for hunting preserves, the original forests of Western Europe were largely destroyed during the Middle Ages in order to obtain not only building material but also charcoal for fuel and for the manufacture of steel. This is surprising, in view of the fact that in the seventeenth century some 360 tons of steel more than met the annual needs of England—at least from the seller's point of view. Today, the art of forestry has reached such levels that, from Denmark to Italy, one finds that good agricultural land can be used profitably for the production of wood. Moreover, the forests of France and the pasture lands of Britain fill admirably the role of natural vegetation as a stabilizer of the landscape.

Grasslands

Changes in forest cover are more obvious and better known than those in the grassland regions. Thus Ohio, once about ninety per cent forested, now is about fifteen per cent in such cover. Farther west the proportion of native tall-grass prairie that has been destroyed is probably even greater. This is especially serious because of the remarkable resilience with which the rich prairie flora can adjust itself to the recurrent crises of climate—a property not shared by the plant cover which agriculture has substituted.

Where precipitation does not exceed the evaporating power of the atmosphere measured in inches of water, grassland, scrub, or desert occur. The subhumid grasslands of the world have developed a deep and fertile topsoil, well supplied with mineral nutrients and remarkably suited to the production of high yields of cereal protein. Because the thickness of the humus horizon varies from three to five feet, erosion goes largely unnoticed, and the use of artificial fertilizers can be postponed for decades. Yet, there is evidence that in Iowa, for example, an average of perhaps one-third of the original A-horizon of the surface has been lost since settlement, while the depletion of mineral nutrients is now making necessary the use of chemical additives.

The semi-arid grasslands sustain a growth of short-grasses and other low-growing herbs which have served to bind the soil into a turf or sod. Here there is a marked excess of evaporative power over precipitation, and a consequent upward movement of water, bringing nutrient minerals to the surface. The soil is inherently productive, except for the lack of moisture. Under natural conditions, good, though sparse, grazing was afforded by the native grasses, which not only held the surface in place, but cured on the stalk, retaining their value as forage.

Outward pressure from the centers of population brought these lands under settlement, and techniques of dry farming were developed. The level land being well suited to mechanized farming, good yields of high-protein cereal at minimum cost were found to be possible. The concurrence of moist years with periods of high demand and good prices encouraged the extensive plowing up of the original short-grass sod during both World Wars. But in both instances the moist years were followed by dry, and the autumn-planted wheat either failed to germinate or made such feeble growth that it could not stabilize the lighter types of soil against the strong dry winds of late winter and spring. Severe dust storms were produced by the resulting erosion. This phenomenon is all the more remarkable for having repeated itself in less than a quarter century in a literate, highly technological culture that had made remarkable efforts to repair the effects of the first series of dust storms and was well-informed of the consequences to be expected from repeating the mistakes which had led to them. However, the entire fault does not lie alone with the more speculative and less responsible aspects of the free enterprise system. Influential spokesmen for scientific agriculture, more concerned with the latent fertility of arid soils than with the inevitable pattern of recurrent drought, did too little to discourage exploitation, and in some cases encouraged it.

Some confusion is due to the clear evidence of periods of rapid erosion and gully formation in recent geological time, but before the known advent of man. This is especially noticeable in our own Southwest, and has led some scientists to minimize the effects of overgrazing as a cause of accelerated erosion today. Past erosion cycles were due to intervals of dry climate, and we have been in the beginning of such an interval since about 1700; so, runs the reasoning, why blame man for a natural phenomenon? The answer lies in comparing such overburdened ranges as those of the Navaho with others which have been subjected to reasonable use. It is possible to find hillsides on which a fence separates a field of gullies from one which is intact. That we are in a time of increased climatic hazard is certain. It would seem equally certain that a scientific culture therefore should exercise more, rather than less, caution in its pattern of land use.

The effect of destroying or damaging natural communities is not confined to increased erosion. Water, with wind, is the chief erosive agent. Beside stabilizing the land surface, natural vegetation is a major regulator of the hydrologic cycle—indeed it is chiefly in this way that the surface is stabilized.

The Problem of Water

If the water cycle be roughly described as (1) evaporation from the seas, (2) transport over the land, (3) rain or snow fall, and (4) flow back to the sea, it is chiefly during stage (4) that water is available for the sustenance of life on land. By prolonging this stage, terrestrial life gets the maximum benefit from moisture. Whatever shortens the time that water is in or on the land decreases its utility to land life, including our own.

Continuous vegetative cover retards the flow of water. It also renders the ground more permeable, thus maintaining the water table. We now have clear evidence that natural forest soil is far more permeable than adjacent agricultural land of various types. In one instance it has been shown that, while pasture and cultivated land soon become saturated, forest absorbs the equivalent of nearly 500 inches of rainfall. It seems reasonable to suppose that the same relationship holds as between native prairie and average farmland derived from it. A number of factors, not the least of which is compaction due to increasing use of heavy farm machinery, are responsible for this reduction in permeability.

A closely related phenomenon is the rapid increase of virtually waterproofed surface areas represented by cities and highways. Except in isolated cases, notably parts of Texas where highway drainage is channeled into storage ponds, the water falling on roofs, sidewalks, and roads is speeded on its way. If used at all it is reclaimed from rivers and requires purification. At the same time, the per capita demand for water in urban centers continues to rise, both for domestic and industrial purposes. Our cities are almost wholly dependent upon water which falls in non-urban territory. Thus we have the phenomenon of a technological culture whose demand for water is steadily rising at the same time that its processes accelerate the return of water to the sea.

But the problem of water involves quality, as well as quantity. In this respect also, a curious picture is presented. No highly developed organism in nature carries massive effluent wastes and influent necessities in the same system of transport. No organized living community in nature is without components that transform waste materials back into harmless and useable form. Yet our streams are utilized as sources for domestic and industrial water supply and concurrently as convenient sewers for domestic and industrial waste, beyond the capacity of their normal process to purify.

To urban wastes is often added the silt from eroded surfaces. The net effect is not only to impair the quality of the water but seriously to affect it as a habitat for aquatic life, both in the stream bed and in the estuary into which it discharges. This has damaged recreation and sport, as well as commercial fishing and shell fishing. Pearl Harbor is no longer hospitable to the molluscs which gave it its original name.

Commerce is affected, also. Computations of the dredging costs due to erosional silt in Cleveland Harbor and at the mouth of the Brandywine show that these costs are equivalent to a tax of several hundred dollars on each ship that enters the two ports each year. Such are the hidden costs of man-made change, patent to the ecologist, yet largely ignored by the industrial and financial leaders of a great technological civilization, in which the art of accounting, or business analysis, has been carried to a high degree of perfection.

Any discussion of water involves not only shortage and quality, but also the question of flood. It is difficult to say to what extent flood itself has been increased by man's activity, for certain catastrophic types of rainfall would almost certainly produce flood in any event. But buildings and other installations within the flood-plain of a great river should be in the same category of calculated risks as vineyards on the sides of an active volcano. Though they are seldom so regarded, nevertheless it is man that is responsible for flood damages, if not for the floods which cause them.

On the other hand, there are at least local floods that can be traced to human disturbance. This applies to northeastern New Jersey, a country of ridges and folds, where clearing, building, and paving of the ridgetops for extensive suburban developments has left rainfall with only one course, that of running down hill and swamping the homes below. Similarly, burning of chaparral or forest clearance of mountain slopes above our western cities has been responsible for flash-floods and mud-flows of a serious character. On general principles one would expect denuded and exploited headwater regions to intensify the destructive character and frequency of floods. While this is assumed as a basic element in national forest policy, far greater funds are expended upon efforts to control flood *after* water has reached the river channels than is devoted to securing proper land use on the tributary uplands to retain the water where it falls. This is an interesting aspect of a technological culture whose emphasis is on engineering rather than biological controls.

The impoundment of water for various reasons is rapidly increasing, due to the substitution of powerful earth-moving machinery for hand labor. In some instances, most notably the Tennessee Valley Authority, there has been an attempt to relate such impoundments to the entire economy of a region, making them serve multiple purposes. Thus flood-control, recreation, power, and water transport have been combined with measures to improve public health and land use in the Tennessee Valley. In numerous instances the approach has been on a narrower basis.

Small farm ponds are being used to compensate for the growing scarcity of suitable ground water. Great public works in arid and semi-arid regions have made possible the extension of irrigation, generation of power, and augmented urban water supplies. Such irrigation has not been uniformly successful, as witnessed by the inability of the beneficiaries to carry out contract payments on schedule. In some instances the high rate of evaporation has resulted in the accumulation of salts which interfere with plant growth. Problems arise from the necessity, in heavily industrial-residential areas, of excluding recreational activities from public water-supply watersheds in order to protect them from contamination, even though suitable recreation space is at a premium.

The Atmosphere

The atmosphere has become a medium of transport and the scene of experiments to modify the weather. On this latter problem scientific opinion is divided, both as to feasibility and wisdom. Our failure thus far to adjust our economy in marginal climatic areas to what we know about their compulsive and recurrent hazards suggests that, even if we can modify climate, the operation at this stage is somewhat premature. Modern society is not yet organized to control the powers which science already has placed at its disposal.

Of perhaps more immediate concern is the growing volume of volatile and solid wastes which pollute the air of great urban centers across the United States. Hydrocarbons from refineries and automobiles, no less than by-products of chemical works, are particularly serious. Vegetation, not only in the vicinity of smelters, but in places like Pasadena, has been affected, and there have been instances of known damage to human beings. Pittsburgh has been greatly improved, and commissions are at work elsewhere, but the problem of protecting the quality of two basic resources, formerly regarded as free economic goods—water and air—remains urgent.

Mineral Resources

As pointed out earlier, the per capita consumption of minerals has continued to rise steadily with the level of living. Re-use is growing, but not sufficiently to offset the depletion of concentrated reserves. Once taken into the economic process these minerals tend to become dissipated or, in the case of energy sources, altered beyond recovery except through the slow biological and geological changes which made them.

The measurement of reserves is difficult technically and exploration increasingly expensive. Strategic and business considerations may hinder us from finding out where we stand. As an official in the copper industry put it, no figures on reserves are given out, as a matter partially of protection to the American public!

However, a few figures will suffice to emphasize the situation. Department of Commerce figures for March, 1954, show that petroleum consumption within the United States is substantially in excess of domestic production. Again, the United States with less than one-tenth of world population is today consuming more than half of the world's mineral production. The fact that much of the wealth so created is being dispensed among other friendly nations is some compensation, but no guarantee that this condition is either desirable or secure. And finally, more than half of the many kinds of minerals used in the American economy must be imported, not being commercially available within our borders.

CHANGE AND ETHICS—A SUMMARY

Change in the ecosystem of which man is a part is inevitable, since this system is a process, and he is inevitably affected by such changes. On the whole, those changes which are natural—i.e. not due to his interference—take place on a scale and at a rate which is not disastrous to him. While some of his activities may regulate and utilize these changes to his benefit, more of them serve to accelerate the rate and widen the scope of natural changes in ways that lower the potential of the environment to sustain him. For such effects he is responsible, and where responsibility enters, so do ethical problems.

Through science, man now has the means to be aware of change and its effects, and the ways in which his cultural values and behavior should be modified to insure their own preservation. Whether one considers ethics to be enlightened self-interest, the greatest good for the greatest number, ultimate good rather than present benefit, or Schweitzer's reverence for life, man's obligation toward environment is equally clear.

REFERENCES

AHLMANN, H. W.

1953 *Glacier Variations and Climatic Fluctuations* (Bowman Memorial Lectures, Series 3). New York: American Geographical Society. 51 pp.

ANDERSON, E.

1952 *Plants, Man and Life.* Boston: Little, Brown. 245 pp.

Anonymous

1953 *Desert Research* (Proceedings, International Symposium held in Jerusalem, May 7-14, 1952, sponsored by Research Council of Israel and the United Nations Educational, Scientific, and Cultural Organization). Jerusalem: Research Council of Israel. 641 pp.

1954 *Growing Food for a Growing World* (The Work of FAO, 1952-53). Rome: United Nations Food and Agriculture Organization. 37 pp.

AVELEYRA, L. and MALDONADO-KOERDELL, M.

1952 "Asociación de Artefactos con Mamut en el Pleistoceno Superior de la Cuenca de México," *Revista Mexicana de Estudios Antropologicos*, Tomo XIII, pp. 3-30.

AYRES, E. and SCARLOTT, C. A.

1952 *Energy Sources—The Wealth of the World.* New York: McGraw-Hill Book Co. 344 pp.

BENCHETRIT, M.

1954 "L'erosion anthropogène: couverture végétale et conséquences du mode d'exploitation du sol," *L'Information Géographique*, 18 Année, No. 3, Mai-Juin, pp. 100-108.

BLIVEN, B.

1953 *Preview for Tomorrow; the Unfinished Business of Science.* New York: A. Knopf. 347 pp.

BROWN, H.

1954 *The Challenge of Man's Future.* New York: The Viking Press. 290 pp.

COLMAN, E. A.

1953 *Vegetation and Water-shed Management; an Appraisal of Vegetation Management in Relation to Water Supply, Flood Control, and Soil Erosion.* New York: Ronald Press. 412 pp.

CRAWFORD, M. D. C.

1938 *The Conquest of Culture.* New York: Greenberg. 250 pp.

CURRY, L.

1952 "Climate and Economic Life: A New Approach; with Examples from the United States," *Geographical Review*, Vol. 42, No. 3, July, pp. 367-383.

DARWIN, C. G.

1953 *The Next Million Years.* Garden City, N. Y.: Doubleday. 210 pp.

DIOLÉ, P.

1954 *4,000 Years under the Sea.* New York: J. Messner. 237 pp.

DOUGLASS, A. E.

1935 *Dating Pueblo Bonito and other ruins of the Southwest* (Pueblo Bonito Series, No. 1). Washington, D. C.: National Geographic Society. 74 pp.

ELLIS, C. B. *et al.*

1954 *Fresh Water From the Ocean for Cities, Industry, and Irrigation.* New York: Ronald Press. 217 pp.

FOX, SIR C. S.

1952 *Water; A Study of Its Properties. Its Constitution, Its Circulation on the Earth, and Its Utilization by Man.* New York: Philosophical Library. 148 pp.

FRIED, M. H.

1952 "Land Tenure, Geography and Ecology in the Contact of Cultures," *The American Journal of Economics and Sociology*, Vol. 11, No. 4, July, pp. 391-412.

Good, R.

1953 *The Geography of the Flowering Plants.* 2d ed. London: Longmans, Green. 452 pp.

Gottman, J. *et al.*

1952 *L'aménagement de l'espace; planification régionale et géographie.* Paris: A. Colin. 140 pp.

Gutkind, E. A.

1953 *The Expanding Environment: The End of Cities—The Rise of Communities.* London: Freedom Press. 70 pp.

Hadlow, L.

1953 *Climate, Vegetation and Man.* New York: The Philosophical Library. 288 pp.

Hatt, P. K. (ed.)

1952 *World Population and Future Resources. The Proceedings of the Second Centennial Academic Conference of Northwestern University, Evanston, Illinois, March, 1951.* New York: American Book Co. 262 pp.

Horberg, L.

1952 "Interrelations of Geomorphology, Glacial Geology, and Pleistocene Geology," *The Journal of Geology,* Vol. 60, No. 2, March, pp. 187–190.

Howell, F. C.

1952 "Pleistocene Glacial Ecology and the Evolution of 'Classic Neandertal' Man," *Southwestern Journal of Anthropology,* Vol. 8, No. 4, Winter, pp. 377–410.

Hymans, E.

1952 *Soil and Civilization.* London: Thames and Hudson. 312 pp.

Iversen, J.

1949 "The Influence of Prehistoric Man on Vegetation," *Danmarks Geologiske Undersogelse,* Raekke 3, pp. 5–25.

Jarrett, H. (ed.)

1953 *The Nation Looks at Its Resources* (Report of the Mid-century Conference on Resources for the Future). Washington, D. C. 418 pp.

Jensen, L. B.

1953 *Man's Foods; Nutrition and Environments in Food Gathering and Food Producing Times.* Champaign, Ill.: Garrard Press. 278 pp.

Judson, S.

1952 "Arroyos," *Scientific American,* Vol. 187, No. 6, December, pp. 71–76.

Kendall, H. M. and Glendinning, R. M.

1952 *Introduction to Physical Geography.* New York: Harcourt, Brace. 508 pp.

Kraemer, J. H.

1952 *Wood Conservation Bibliography; a Selection of References in the Field of Production and Utilization of Lumber and other Wood Products.* Washington, D. C.: U.S. Department of Commerce, Office of Industry and Commerce. 77 pp.

Krick, I. P.

1954 "Weather Modification and Its Value to Agriculture and Water Supply," *Journal of the Royal Society of Arts,* Vol. 102, No. 4924, April 30, pp. 447–468.

La Barre, W.

1954 *The Human Animal.* Chicago: University of Chicago Press. 371 pp.

Leet, L. D. and Judson, S.

1954 *Physical Geology.* New York: Prentice-Hall. 466 pp.

Leopold, A.

1949 *A Sand County Almanac.* New York: Oxford University Press. 226 pp.

Lowdermilk, W. C.

1953 *Conquest of the Land through Seven Thousand Years* (Agriculture Information Bulletin, No. 99). Washington, D. C.: U. S. Soil Conservation Service. 30 pp.

Malin, J. C.

1953 "Soil, Animal, and Plant Relations of the Grassland, Historically Reconsidered," *The Scientific Monthly,* Vol. 76, No. 4, April, pp. 207–220.

Mangelsdorf, P. C.

1952 *Plants and Human Affairs* (Niewland Lectures, Vol. 5). Notre Dame, Ind.: University of Notre Dame. 29 pp.

MARSH, G. P.
1884 *The Earth as Modified by Human Action.* New York: Scribner. 629 pp.
MEGGERS, B. J.
1954 "Environmental Limitation on the Development of Culture," *American Anthropologist,* Vol. 56, No. 6, pp. 801–824.
MINIKIN, R. R.
1952 *Coast Erosion and Protection; Studies in Causes and Remedies.* London: Chapman and Hall. 240 pp.
MONKHOUSE, F. J.
1954 *The Principles of Physical Geography.* London: University of London Press. 452 pp.
ODUM, E. P.
1954 *Fundamentals of Ecology.* Philadelphia: Saunders. 384 pp.
OJALA, E. M.
1952 *Agriculture and Economic Progress.* London: Oxford University Press. 220 pp.
ORDWAY, S. H., JR.
1953 *Resources and the American Dream.* New York: Ronald Press. 55 pp.
OSBORN, F.
1953 *The Limits of the Earth.* Boston: Little, Brown. 238 pp.
PETERSON, E.
1954 *Big Dam Foolishness.* New York: Devin-Adair. 224 pp.
SAUER, C. O.
1952 *Agricultural Origins and Dispersals* (Bowman Memorial Lectures, Series 2). New York: American Geographical Society. 110 pp.
SEARS, P. B.
1935 *Deserts on the March.* Norman: Oklahoma University Press. 231 pp.
1949 "Integration at the Community Level," *American Scientist,* Vol. 37, pp. 235–242.
1953 "The Interdependence of Archeology and Ecology, with Examples from Middle America," *Transactions of The New York Academy of Sciences,* Series II, Vol. 15, pp. 113–117.
1954 "Human Ecology: A Problem in Synthesis," *Science,* Vol. 120, pp. 959–963.
SHANTZ, H. L.
1954 "The Place of Grasslands in the Earth's Cover of Vegetation," *Ecology,* Vol. 35, No. 2, April, pp. 143–151.
SHAPLEY, H. (ed.)
1953 *Climatic Change.* Cambridge, Mass.: Harvard University Press. 318 pp.
Staff Correspondence
1955 "Europe Issues Aired on Overpopulation," *Christian Science Monitor,* Jan. 29, p. 2.
STAMP, L. D.
1952 *Land for Tomorrow; The Underdeveloped World.* Bloomington: Indiana University Press. 230 pp.
SUTTON, O. G.
1953 *Micrometeorology; a Study of Physical Processes in the Lowest Layers of the Earth's Atmosphere.* New York: McGraw-Hill Book Co. 333 pp.
THOMPSON, L. M.
1952 *Soils and Soil Fertility.* New York: McGraw-Hill Book Co. 339 pp.
THORNBURY, W. D.
1954 *Principles of Geomorphology.* New York: J. Wiley & Sons. 618 pp.
THORNTHWAITE, C. W.
1953 *Topoclimatology.* Seabrook, N. J.: The Johns Hopkins University, Laboratory of Climatology. 13 pp. (mimeo.)
VERULAM, J. B. G., EARL OF; ANGUS, J. H.; and CHAPLIN, S.
1952 "The Geography of Power: Its Sources and Transmission," *The Geographical Journal,* Vol. 118, Part 3, September, pp. 251–266.
VEYRET, P.
1951 *Géographie de l'elévage.* Paris: Gallimard. 254 pp.
VIAL, A. E. L.
1952 *Alpine Glaciers.* London: Batchworth Press. 126 pp.

WEAVER, J. E.
1954 *North American Prairie.* Lincoln, Neb.: Johnsen Publishing Co. 348 pp.
WOYTINSKY, W. S. and WOYTINSKY, E. S.
1953 *World Population and Production; Trends and Outlook.* New York: Twentieth Century Fund. 1268 pp.
YERG, D. G., under direction of GRAY, D. E.
1951 *Annotated Bibliography on Snow, Ice, and Permafrost.* Wilmette, Ill.: U. S. Library of Congress, Science Division. 226 pp.

Primatology in its Relation to Anthropology

ADOLPH H. SCHULTZ

Professor of Anthropology and Director of the Anthropological Institute of the University of Zürich, Switzerland, since 1951, Dr. Schultz was formerly Research Associate of the Carnegie Institution of Washington, 1916–1925, 1937–1938, and Associate Professor of Physical Anthropology, 1925–1951, at the Johns Hopkins Medical School. He was the recipient of the 1948 Viking Fund Medal in Physical Anthropology, is a member of the United States National Academy of Sciences, and was recently elected a Foreign Fellow of the London Zoological Society.

INTRODUCTION

THE tempting invitation to contribute a survey of "the major accomplishments and trends in primatology during the period of 1952 to 1954" for a yearbook of anthropology we accepted somewhat rashly before coming to realize that "major trends," which are new and clearly recognizable as such within only two or three years, are exceedingly rare in any science and particularly in such a young speciality as the zone of overlapping interests between mammalogy and anthropology, which had not even become dignified by a name of its own until very recently. To select the major accomplishments among the current primatological papers was found a difficult task as soon as we tried to decide which are merely minor ones. The size or extent of an investigation would hardly form a fair basis for such distinctions nor would the criterion that a study seems to be reliable and its results convincing. We have found no less personal and arbitrary way to judge "accomplishments" than by the interests they serve and whether or not they contribute something of significance to the solution of problems which happen to appear to us to be worth-while. Simply because a science of man came last in the history of natural history, we have the urgent feeling that priority should be given to the means by which anthropology best can develop out of zoology into the most important of all modern biological specialities. That the logical and lasting connection is a science of primates is a matter of course. Of the voluminous newer primatological literature here disregarded is the large and meritorious part which does not seem to have, as far as one can judge today, any bearing on anthropological problems. Also foregone is a direct and full consideration of the current and exceptionally important literature on the many new fossil finds of higher primates since this is the subject matter of the article, next following, on "Fossil Man and Human Evolution."

Considering these limitations, the primatological literature of the last two or three years cannot boast of many outstanding accomplishments leading us to, and beyond, new horizons, but it does contain much to suggest and to justify some remarks on the benefits which anthropology can and should gain from close cooperation with primatology.

Physical anthropology developed from two main roots, a zoological, comparative-anatomical one and a historical, racial one; the former always was centered on problems of man's evolution, whereas the latter predominantly considered questions concerning the history of human races and their interrelationships. All other interests of physical anthropology, such as growth, biometrics, constitution, and genetics, historically speaking are branches rather than roots, not only because they appeared later, flourishing with the application of new theories and methods borrowed from other sciences, but also because they retain less contact with the soil of anthropological origin: zoology and human history.

A survey of the literature on physical anthropology of the past hundred years reveals many profound changes chronologically as well as geographically. Papers on human evolution, or, at any rate, of a comparative-anatomical nature, though nearly taboo in some countries, predominated in general and at least qualitatively for a long initial period. In numbers they gradually became surpassed by titles which could be classified under "racial description and attempts at racial analysis." This category of papers, though hardly decreasing in absolute numbers, has become *relatively* less numerous today through the great increase in the physical-anthropological literature devoted to many new interests. Unfortunately the primatological literature between about 1920 and 1950 has formed a steadily decreasing and all too small part of the entire yearly output of anthropological papers. The science of man as a specialized part of zoology cannot afford to neglect its natural biological foundation which consists in the systematic comparison between all facts we have found regarding the nature of man and the corresponding conditions in the other primates. Through comparisons, mere descriptions change into science. The old "anthropography" used to be satisfied with the describing and cataloguing of the varieties of mankind, but modern anthropology wants to understand and explain mankind, and this first of all by comparing not only all living races, but recent ones with those of the past and the human animal with the products of other branches of the primate family tree. The last category of comparisons so far has concerned itself predominantly with the morphology of the adult, and a mere beginning has been made with the vast variety of other problems which offer so many opportunities for advances in our understanding of man through comparisons with non-human primates. How much valuable help anthropology can expect from primatology has been shown in the psychological field by Yerkes and his many co-workers, and in regard to social behavior in a natural environment by Carpenter. Considering the large number and variety of primates we can claim to have gained only mere glimpses of what can be learned from such comparative behavior studies. Our information on basic problems, such as the composition of a natural population according to age and sex and its profound influence on behavior, is tentatively known for only three or four species. The role of sound in social relations, undoubtedly of great and universal importance among primates, is still a practically untouched, though highly promising, field for future comparative investigation. Growth and development have become quite well known for the White race and good progress is being made with the urgent collection of comparative data for other races. The ontogenetic conditions in non-human primates, on the other hand, can only be described in a tantalizingly incomplete manner, but these fragments already prove their significant value for the analysis of human specializations. We can never hope to explain the characteristics of races and the peculiarities of all mankind, as they appear in the adult stage, without an adequate knowledge of all their ontogenetic changes in many more primates than have been investigated up to now. Questions of environmental influences, variability, selection, race formation, sex differentiation, etc., with which physical anthropology is so intensively concerned, all demand the simultaneous investigation of man *and* the apes for comparisons between nature's diverging experiments with one and the same ancestral stock. The following brief review of the current literature will indicate to what extent we are at present using the many opportunities for primatological research of anthropological significance.

DESCRIPTIVE AND COMPARATIVE STUDIES CHIEFLY ON ADULTS

By far the largest single contribution to primatology of the last few years is the splendid monograph on the prosimian primates (without *Tarsius* and *Tupaia*, the so-called *Strepsirhini)* by Hill (1953a). Though intended primarily for comparative anatomists and taxonomists, this volume of 800 pages contains a wealth of detailed information for which physical anthropologists can be most grateful in connection with many different problems. Not only does this reference work give full systematic descriptions, genus by genus, of the skull, dentition, dermatoglyphics and all those surprisingly varied, localized specializations, but it also can teach the anthropologist how widely these primitive primates can differ in such respects as general body size, body proportions, coloration, etc., and how single species have become differentiated in sometimes a great many geographical races, though in general their evolutionary tempo has been exceedingly slow.

Also concerned exclusively with prosimians are the studies of Schultz (1954a) on the numbers of vertebrae and on the body proportions in these primates. Based on much larger series than ever before had been used for these problems, it could be shown that in no prosimians has the pelvic girdle migrated cranially, as it has in higher primates, but in many forms the opposite trend has been very marked, the number of praesacral segments having increased from the primitive 26 to nearly and fully 30. The fusion of more than three vertebrae into one sacrum, characteristic of all higher primates, has also developed independently in one Asiatic and one African prosimian genus, and an extreme reduction of the caudal part of the spinal column has occurred repeatedly among prosimians, just as it has became changed with apparent ease among various Old World monkeys and all apes and man. The amazingly high vertebral variability of some prosimians emphasizes by contrast the great stability of man in at least this respect. The finding that the length of the lower extremities, relative to the trunk, is greater in several types of prosimians than in man, forces us to drop this proportion from the list of human distinctions.

Also dealing mainly with prosimians are the investigations by Starck (1953) and by Hofer (1953), in which some of the basic factors determining skull formation are analyzed by means of the great variety of cranial constructions which have developed among the lowest primates. Of particular interest for physical anthropology is Starck's demonstration of the ontogenetic changes in the topographic relations of the skull and their close dependency on the development of the brain and of the masticatory musculature. Hofer's similar comparative craniological study contains some especially instructive discussions on sinus formations and their role in cranial architecture and in providing surface area for muscle attachment. In another publication Hofer (1954) shows the remarkably close correlation between the shape of the brain and of the thin-walled skull in the night monkey, *Aotes*, and describes the cranial responses to various structural requirements.

In the generally conservative mammalian order of primates it is the brain which has undergone the outstanding evolutionary specializations. Unfortunately this most important organ has not been investigated in recent years with the intensity it fully deserves. Connolly, who had contributed a very comprehensive and valuable investigation of the external macroscopic morphology of primate brains (1950), indicates in a more recent report (1953) that such comparative studies permit only limited conclusions regarding the more detailed taxonomic and phyletic problems which interest us today, because, for one reason, endocranial casts of fossil finds at best cannot produce more than a part of the information needed for significant comparisons. That the absolute size of the brain is of very little interest except in its relation to total body size, has been recognized for a long time, yet some anthropologists still seem to be fascinated by the amount of cranial capacity as an isolated value. Thus, Vallois (1954) emphasizes again the arbitrarily chosen limit of 800 cc. as a line of separation, or a "cerebral Rubicon," between apes and the Australopithecines on one side and fossil and recent man on the other side. Some valuable additions to the steadily growing list of thorough and detailed studies on the morphology of the brain in single species of primates have appeared in the period under review, notably the publications by Olszewski (1952) and by Clark and Powell (1954), both dealing with macaques and both of great help for the utilization of monkeys in neurophysiological work, which directly or indirectly is bound to advance our ultimate understanding of man's supreme specialization—his brain.

Among the new reports on single species of non-human primates the anatomical description of a gorilla by Steiner (1954) is of special interest, since it supplies a mass of much needed data for future comparisons, including information on the endocrine system of which we still know all to little. The musculature of a chimpanzee of the rare subspecies *Pan troglodytes paniscus* has been recorded in careful detail by Miller (1952), who found no noteworthy differences between this and the other varieties of chimpanzees. Here also are to be mentioned the sound and welcome contributions to our knowledge of the anatomy of the always interesting tarsier by Hill (1954a,b).

Several new papers have been added recently to the enormous literature on the morphology of primate teeth. Hill (1953b) has contributed a report on dental variations in a series of mandrills, and Ashton (1953) one on the occurrence and frequency of accessory cusps on the permanent lower first molars of the African anthropoids. The comparative study of dental roots and pulp cavities in lower primates by Senyürek (1953) is particularly valuable because these often inaccessible parts have been studied not nearly as extensively as the crowns of the teeth. Among the many detailed findings there are various ones with a significant bearing on primate evolution, and it is to be hoped that they can and will soon be compared with corresponding data on the higher primates.

A considerable series of new comparative studies on localized structures of primates represent attempts to evaluate the same features in the fossil Australopithecines. Thus Le Gros Clark (1952a) has contributed detailed metric and descriptive data on the teeth of the African apes and of the Australopithecines for a new demonstration of the very significant differences between these primates. Based on large series of skulls of man and the great apes, Ashton and Zuckerman (1954) have investigated the articular fossa, reaching the main conclusions that this structure really does not differ basically but only quantitatively in man and the apes and that in the latter respect the Australopithecines hardly can be distinguished from the recent apes. The formation of the mandibular joints also has been studied by Biegert (1955), in the Anthropological Institute at Zürich, with special consideration of the ontogenetic and phylogenetic changes in representatives of all major groups of primates. As in so many other instances, this investigation also shows that quantitative generic differences primarily are due to phylogenetic changes in ontogenetic processes. Ashton and Zuckerman (1952a) furthermore have made a comparison between the size and shape of the mastoid processes in adult gorillas and chimpanzees and in the Australopithecines, concluding that the conditions in the latter stand well within the ranges of variations among the former. To this problem Schultz (1952b) could add the finding that real mastoid processes develop in apes, if at all, very late ontogenetically, whereas very early and regularly in man. It will be interesting to learn, if possible, the age changes of this structure in the Australopithecines. Regarding the latter it has been reported that they possess only a single infraorbital foramen on each side, as in man. Schaefer (1954) subsequently has tried to show that among all recent nonhuman primates the average number of infraorbital foramina lies significantly above 1, the gorilla having the lowest average of 1.5. Schultz (1954b), however, found among his more extensive material that a single infraorbital foramen exists more regularly in at least one race of gibbon (average = 1.04) than in man (average = 1.08) and that this feature can apparently change readily, as indicated by its very marked differences according to species or even race in some forms.

Undoubtedly also because of the conditions in the Australopithecines, Kälin (1954) has begun some comparative studies on primate pelves. His preliminary report, dwelling chiefly on some points of technique, cannot claim as yet to have elucidated significantly that key problem of human evolution which is concerned with the questions of when, how, and why the pelvis (especially the ilium) became so profoundly changed with bipedal locomotion. According to another preliminary report the problem of pelvic change in man and in the Australopithecines also is being attacked by Mednick (1954).

Among still other comparative studies on localized characters may be mentioned those on certain topographic relations of the ethmoid bone which Schultz (1952a) could base on extensive series, after these same relations had been misprepresented in the literature on the basis of evidently inadequate observations for rather far-reaching and erroneous phylogenetic conclusions. For instance, it cannot be without some significance that a sutural contact between the ethmoid and lacrimal bones exists without any exception in all monkeys and Asiatic anthropoids, in all of the Australopithecines found so far, and in 97 per cent of men, whereas in only half or less in the cases of the African apes. On the other hand, an endocranial, interfrontal contact behind the ethmoid was found as an exceedingly rare exception in man and orang-utan, but as a common or even regular occurrence in all the other primates. The palatine ridges have been used by Klenke (1954) in another attempt to elucidate man's place among the primates, but the results are not specific enough to contribute anything really new, besides confirming the older conclusions of Schultz that in these structures man stands nearest to the African apes.

Two reports by Wiener (1952) and his collaborators (1953) have demonstrated a lack of identity, but nevertheless a very close and significant serological similarity in the blood of chimpanzee and of man. Using blood from 17 chimpanzees, Butts (1953) found four-fifths to belong to group A and one-fifth to group O and that all of his specimens were Rh-positive. The one "pygmy" chimpanzee in this series did not differ from the others in any of the points under investigation. It seems most desirable that the collection of such data on biochemical evolution will increase more rapidly in the future than it has in the past, particularly by being extended to many more species.

TAXONOMY AND PHYLOGENY

The outstanding contribution to primate taxonomy of the period under review is Hill's work (1953a) on prosimians, already referred to, which generally adheres to a sound, modern view in the matter of classification, particularly by lumping rather than splitting species. The opposite trend in the systematics of recent primates is represented by a proposal to elevate the misnamed "pygmy" chimpanzee into a new anthropoid genus, *Bonobo*, on account of some much overrated and variable peculiarities (Tratz and Heck, 1954). According to observations on much more extensive material, however, subspecific or at most specific rank does ample justice to this variety of chimpanzees (Schultz, 1954c). Even more extreme and certainly non-viable changes in the systematics of, and phylogenetic relations between, primates have been proposed by Frechkop (1954a,b), who wants to separate, for example, the recent great apes into two families (!), *Gorillidae* and *Simiidae*, simply by claiming that their many close similarities prove his theory of "adaptive parallelism"!

Of foremost interest to anthropologists are the ceaseless attempts to reconstruct the phylogeny of the catarrhines and to select those fossil apes which stood nearest to the human branch. This fascinating problem needs constant reconsideration with the addition of new fossil finds and the shift in emphasis on the significance of the bewildering mass of available evidence. In this chapter it merely may be mentioned that, besides all the late Pliocene Australopithecines, the wealth of new East African Miocene primates, described chiefly in such exemplary manner by Le Gros Clark (1952b and, with co-authors, 1951), are of paramount importance. Not only these relatively new discoveries of African fossil primates call for revision of the pedigree of higher primates, but also the newly studied old fossil finds in Europe of the Miocene *Oreopithecus.* The latter is certainly not a lower catarrhine, as had commonly been claimed largely on the basis of very crude casts, and most probably not a pongid, as Heberer (1952a) has concluded, but a primitive hominid, according to the careful examination of all the original specimens by Hürzeler (1954). The last few years can boast of a marked increase in publications concerned with man's position on the primate family tree, with his relation to the Australopithecines, and with the concrete means and abstract ways for attacking these problems. That the conclusions of the experts are still far from being in general agreement, and that this recent literature includes some intensively controversial opinions, promises continued work on, and search for, more evidence in the future. Even though our most recent views on man's evolution are to be presented in the next chapter of this volume, a few examples of the latest, relevant, and sadly scattered literature may be referred to here, especially because these papers are primarily primatological contributions, though of great anthropological significance. As a challenge for thoroughly substantiated conclusions, Zuckerman (1952, 1953) has published several papers in which he dwells on the weaker points among the arguments for a close position of the Australopithecines to man's line of ascent. Particularly to be welcomed is his insistence that no generalizing conclusions from comparisons can be valid without adequate consideration of the factors of variability in all the forms compared. It is one of the major accomplishments of recent years that gradually we have come to realize that man's variability is far from unique and that comparisons with only a few random samples of other higher primates may be very misleading and can even do more harm than good. In spite of the critical doubts and denials, published by Zuckerman and others, the great majority of those dealing with the taxonomy and phylogeny of the higher primates has become convinced that the Australopithecines stand at least much nearer to the contemporary ancestors of man than any other known group of primates.[1] The reviewer cannot resist the temptation to express here his personal conviction that it is the pelvis, rather than skull and dentition, which will eventually cast the decisive vote in these controversies. It is a pity that no casts of the adult Australopithecine pelvic finds are available as yet for much needed, new comparative investigations.

Among the especially noteworthy studies on primate phylogeny the paper by Abbie (1952) has yet to be mentioned. It is concerned, like many others, only with the most difficult part of the problems of primate evolution—that small and last part culminating in man. Of Abbie's conclusions the following may be quoted here, because it is persistently ignored in spite of much evidence, available for some time: "Evolution up to man has not been marked by a progressive reduction of simian features as is usually assumed; it is distinguished simply by failure to attain the simian degree of differentiation in a number of physical characters." It has to be added that by "simian" Abbie evidently means here "anthropoid" or "pongid." That man is not "the highest primate" in many respects, is still far from generally recognized. It is evident also from the prevalent usage of such expressions as "infrahuman" primates in the current writing by even physical anthropologists. Not only are most of our fellow-primates above us in trees, but some are also above us along the pathways of phylogenetic specializations in many localized characters. The fact that we are cerebrally "supra-simian" does not justify calling our poor relations "sub"- or "infrahuman." Abbie's final conclusion "that a common ancestry for the primates is to be sought amongst primate embryos, not adults" leads to the studies which attempt to solve the great problem of man's place in nature by means of the phylogenetic specializations in his ontogenetic processes—specializations which can be determined only through the painstaking accumulation of comparative ontogenetic data.

---

[1] Clark, 1954a,b; Heberer, 1952b; Kälin, 1952; Remane, 1954; Robinson, 1954a,b; Schultz, 1953a; Teilhard de Chardin, 1952; and many others.

GROWTH AND DEVELOPMENT

In a highly interesting recent paper Le Gros Clark (1953) has emphasized that growth in absolute size of the entire body and in relative size of its parts, as well as some developmental conditions in the dentition are of great significance for the understanding of primate phylogeny and systematics. He has pointed out, for example, that in Miocene apes the limbs did not yet develop the various adaptations for brachiation which have come to characterize the recent anthropoids in the course of their growth. Bolk's well-known fetalization theory effectively had called attention to the important role of ontogenetic retardations in man's evolution. Newer comparative studies could clearly show that accelerations as well as retardations have occurred during evolution, not only in man, but in other primates as well. To the list of such ontogenetic changes of phylogenetic consequence several new examples could be added recently. The fusion of the sternal segments, to name one, has very clearly become accelerated in man, as compared with the apes, and in the latter, in contrast to monkeys. Similarly, the complete and permanent descent of the testes occurs in man at an earlier stage of development than in any other primates (Schultz, 1952a). It has already been mentioned that the mastoid processes appear and grow very much earlier in recent man than in apes, among which real such processes develop, if at all, only after adulthood (Schultz, 1952b).

As has become known for some time, the cranio-vertebral joint shifts its relative position aborally during postnatal growth in all monkeys and apes, but remains far orally throughout life in man. This has been confirmed with detailed data for chimpanzee and gorilla by Ashton and Zuckerman (1952b), who also concluded that in this respect the Australopithecines stand nearer to the apes than to man. Based upon data, assembled during many years, on many different mammals, on representatives of all groups of primates, and on all stages of their post-embryonic development, Schultz (1955) has reinvestigated this basic problem, advantageous for erect posture, to the forward position of the head joint in adult man. Here merely can be mentioned the so-far unexplainable finding that among all mammals only in *Tarsius* and the simian suborder of primates has the head joint shifted orally from its primitive location at the caudal end of the head in late fetal and infantile stages of development. This early ontogenetic position becomes lost again during postnatal growth in varying degrees in all monkeys and apes, but for unknown reasons is retained throughout life with little change in fossil and recent man. These will have to be found among the early ontogenetic conditions, common to all simian primates, and cannot be connected with the relative weight of the head (which is much greater in many monkeys and apes than in man), nor with some necessary preparation for erect posture (many mammals hold the cervical part of the spinal column as erect as in man, but head balance remained extremely unfavorable).

Three excellent contributions to our knowledge of primate ontogeny have appeared recently, which will gain in value especially as corresponding data on other species become available for comparison. These three publications deal in common with postnatal development in animals of exactly known age. A detailed and carefully documented report by Riesen and Kinder (1952) describes the postural development of chimpanzees during infantile life, giving constant comparisons with the conditions in human infants according to the Gesell behavior examination. Of the many conclusions of great interest to anthropologists the following examples deserve especially to be quoted here: "The data provide ample confirmation of the impression that the chimpanzee is an upright animal, and that he develops toward vertical posture in the first year of life following a course very similar to that of the human infant." "The ages of appearance of the developmental items (in postural behavior) *averaged* one-third earlier for the chimpanzee subjects than for human infants. . . ." "There are a few items for which the human infants have an earlier critical age than the chimpanzee." Gavan's 1953 study of the postnatal growth in chimpanzees of known ages contains much welcome information on rates of increase in body weight and in lengths and breadths of various bodily parts for both sexes, but unfortunately too few data on the actual measurements have been made available for the use of other investigators.

The many new records on the eruption of the milk teeth in macaques of known ages by Hurme and van Wagenen (1953) forms a splendid source of reference for future comparisons, though opportunities for equally well-founded studies on captive-born monkeys of other species are unfortunately very rare. One of the above authors also has contributed a preliminary report on the exact age at menarche in macaques (van Wagenen, 1953) as one more reliable item to be added to the still very incomplete comparative-ontogenetic time-table of primates.

The *order* of eruption of the teeth, i.e., the relative rather than the absolute ages of dental development, has become better known through several recent studies which support Schultz's old theory that with the prolongation of the postnatal life periods among the primates there had to occur an acceleration in the replacement of the deciduous teeth and simultaneously a gradual retardation in the addition of permanent molars. According to Bennejeant (1953), in primitive *Tupaia* and fossil Adapidae all permanent molars erupt while the first dentition is still fully in place or nearly so. Apparently this holds true also for one of the platyrrhines, *Aotes*, according to a dissertation by della Sera (1952, quoted by Bennejeant, but not yet seen by this writer). In the recent African apes, of which large series have been reinvestigated by Clements and Zuckerman (1953), the replacement of the milk teeth begins before the second molars appear and ends before the third molars become added. The latter authors also confirm the findings of previous investigators that in modern Whites this shift in dental eruption has reached its extreme, though it has not yet become stabilized. It seems highly desirable that more adequate information will become available on the absolute and relative ages of dental eruption in all human races.

The already clear, but still incomplete, evidence for a highly consequential phylogenetic trend to lengthen the various life periods in primates has become enriched by the following new and important observation, briefly recorded by Mann (1954): A pair of captive *Tupaia* had offspring three times in one year after gestation periods of only twenty-one days, showing that these small and unspecialized primates still have an extremely short prenatal life and a surprisingly rapid succession of generations, producing according to the best of available information three or four embryos each time, of which only two or three survive to birth.

Among the new comparative primatological studies the following also may be mentioned here since they deal with growth directly, or at least indirectly with the effect of growth, as found in adults. In the search for factors influencing the thickness of bones of primates, Schultz (1953b) could demonstrate that with advancing postnatal age all the long limb bones and the vertebral column become more slender. It could also be shown that at the completion of growth the absolute thickness of the limb bones is closely dependent upon the load they have to carry, i.e., the body weight, but is generally very little affected by phylogenetic changes in limb length. Among all adult primates man is distinguished by having, relative to his body size, comparatively thick long bones of the lower limbs, and especially slender ones of the upper limbs and, furthermore, exceptionally thick lumbar vertebrae, all as consequences of man's specialized posture.

In a comprehensive and careful allometric analysis of the influence of absolute body size on the relative size of many bodily dimensions, Boné (1953) has obtained some remarkable and surprisingly consistent results which promise to be of significant help in the solution of various basic problems in physical anthropology. To express it very briefly and incompletely: he found that in man as well as in other primates there occurs a progressive decrease in the *relative* length of such measurements, as face height, hand length, foot length, and shoulder breadth, besides head length and breadth, with an increase in trunk height within each series of individuals, representing one species, or race, sex, and age. In other words, the smallest individuals of a population differ from the largest ones in many body proportions to a very significant extent, entirely on account of the law of allometric growth. Changes in general body size, which are known to follow often upon changes in some environmental factors, can be expected to produce automatically changes in many more body proportions than merely those well-known ones connected with the relative size of the brain and the eyes; and this not only in animals, but also in man.

Studies on allometric growth and its bearing on evolution are already permitting many new and highly interesting generalizations in zoology (e.g., Rensch, 1954), but in anthropology they have not yet received as much attention as they deserve. In primatology, too, the relevant literature is still very scanty. In one recent contribution to the latter, Kühlhorn (1954) has attempted to find the relation between body weight and the size of various organs in a series of wild capuchin monkeys, which, however, is too small to yield more than very tentative conclusions.

DIFFERENT BIOLOGICAL STUDIES

The density and composition of a free-ranging monkey population and the social behavior of its members are primatological problems of great and direct significance for anthropology, but little progress has been made in this direction since the exemplary and well-known contributions by Carpenter. His first such study, that on the howling monkeys of Barro Colorado in Panama, has recently, after an interval of eighteen years, been repeated by Collias and Southwick (1952). It was found that the total population in this restricted area had become reduced to only about half its former density and with this the average size of each clan as well as the proportion of young also had become greatly reduced. The detailed report on these surprisingly rapid changes contains also interesting discussions on their probable causes and possible consequences. That an epidemic of yellow fever was responsible for the population decline, as the authors suggest, appears highly probable in view of the findings from numerous recent epidemiological field studies on monkeys in the American tropics (e.g. Siler, 1951; H. C. Clark, 1952). That diseases, parasites, injuries, and malformations probably play more important roles in the growth and composition of wild primate populations than all such factors as food supply, climate, predators, etc., the writer learned from his recent survey of a very extensive and scattered literature bearing upon the occurrence and frequency of pathological and teratological conditions in wild non-human primates (to appear as one chapter in a handbook of primatology by many co-authors, to be published by S. Karger A.G., Basel). Here it merely can be mentioned that a long list of different pathological conditions have been recorded for some population samples of monkeys and apes in their native habitats with degrees of prevalence which can far surpass the frequencies of similar conditions in man. These findings force us to regard the surprisingly frequent and so *commonly overlooked abnormal conditions* as the chief selective factors in primate evolution, acting directly through elimination or indirectly through selective survival of variations having acquired some tolerance or immunity.

Our knowledge of the behavior of non-human primates also is being advanced significantly by the systematic comparative psychological studies of Hediger, who, in his most recent book (1954), again has contributed some novel interpretations of various actions in monkeys and apes.

An original and stimulating new book by Krumbiegel (1954) must be mentioned too, because it contains a good deal of primatological information on behavior and on such items as locomotion, nutrition, and reproduction. Under the last heading, it also lists much data on sex-cycles, gestation periods, multiple births, and hybrids among non-human primates. Especially noteworthy is the cross between a mangabe father and mandrill mother in the zoological garden of Rome. This now nearly full-grown intergeneric hybrid had been seen recently by the writer, who is convinced of its authenticity and has become willing to admit that all sorts of hybridization *could* have occurred in primate evolution.

CONCLUSIONS

No new science is recognized and becomes full-fledged until it has recorded its history. The historical development of such technical aspects of primatology as the relevant changes in systematics and in our views regarding primate phylogeny and the causes of human specializations, has been published repeatedly and is mentioned in most histories of biology, but all this appertains chiefly to only the last two centuries. A less technical, but much more comprehensive history of man's interest in and views on monkeys and apes has now become available in a scholarly treatise by Janson (1952) on the role of non-human primates in the culture of the Middle Ages and the Renaissance. This fascinating account of the early and wide-spread use of the Old World monkeys as symbols for imitation and sexuality and in the role of mischievous fools ends with a particularly interesting chapter on "the coming of the anthropoids" in which it is rightly claimed that "the discovery of the Great Apes . . . must be counted among the important achievements of the Age of Exploration." Its gradual consequences for the later philosophical views on the nature of man were profound and decisive, but only after a period in which the man-like apes had served chiefly as caricatures of man in countless satirical writings, drawings, and paintings. A *science* of primates evolved but slowly after Tyson's pioneering and classic publication on the anatomy of *Homo sylvestris* at the start of the eighteenth century.

In concluding this undoubtedly quite incomplete enumeration of the most recent primatological literature, it may be pointed out that quantitatively as well as qualitatively this literature compares very favorably with that of any equally short period of the past. Indeed, it appears that active interest in primatology again may be increasing and this especially among physical anthropologists, who have contributed at least as large a share as have mammalogists, comparative anatomists, or paleontologists. In various respects anthropology has developed along paths leading into isolation. It no longer should hesitate to stake clear claims for all of primatology, now that the comforting old gap between the morphology of man and ape has practically disappeared with the latest fossil finds and that comparative psychology threatens our last and feeble definition of separation by which a science of man is supposed to begin only with creatures who can use *and* make implements.

REFERENCES

Abbie, A. A.
1952 "A new approach to the problem of human evolution," *Transactions of the Royal Society of Southern Australia*, Vol. 75, pp. 70–88.

Ashton, E. H.
1953 "An accessory cusp on the lower first permanent molar of the chimpanzee and gorilla," *Proceedings of the Zoological Society of London*, Vol. 123, pp. 27–32.

Ashton, E. H. and Zuckerman, S.
1952a "The mastoid process in the chimpanzee and gorilla," *American Journal of Physical Anthropology*, Vol. 10, n.s., pp. 145–153.
1952b "Age changes in the position of the occipital condyles in the chimpanzee and gorilla," *American Journal of Physical Anthropology*, Vol. 10, n.s., pp. 277–288.
1954 "The anatomy of the articular fossa (fossa mandibularis) in man and apes," *American Journal of Physical Anthropology*, Vol. 12, n.s., pp. 29–62.

Bennejeant, C.
1953 "Les dentures temporaires des primates," *Bulletin et Mémoires Société d'Anthropologie de Paris*, Xe série, Tome 4, pp. 11–44.

Biegert, J.
1955 "Das Kiefergelenk der Primaten in ontogenetischer und phylogenetischer Hinsicht" (ready for the press).

Boné, E.-L.
1953 "L'influence de la hauteur du buste sur l'allométrie des segments particuliers chez l'homme et divers autres primates," *Archives suisses d'Anthropologie générale*, Tome 18, pp. 1–192.

Butts, D. C. A.
1953 "Hemaglutinogens of the chimpanzee," *American Journal of Physical Anthropology*, Vol. 11, n.s., pp. 215–224.

Clark, H. C.
1952 "Endemic yellow fever in Panama and neighboring areas," *American Journal of Tropical Medicine and Hygiene*, Vol. I, pp. 78–86.

Clark, W. E. Le Gros
1952a "Hominid characters of the Australopithecine dentition," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 80 (1950), pp. 37–54.
1952b "Report on fossil hominoid material collected by the British-Kenya Miocene expedition, 1949–1951," *Proceedings of the Zoological Society of London*, Vol. 122, pp. 273–286.
1953 "Growth and body proportions in relation to the systematics of the higher primates," *Proceedings of the Linnean Society, London*, Session 164, Pt. 2, pp. 140–148.
1954a "The antiquity of *Homo sapiens* in particular and of the Hominidae in general," *Science Progress*, Vol. 42, No. 167 (July), pp. 377–395.
1954b "Reason and fallacy in the study of fossil man," *The Advancement of Science*, Vol. 11, No. 43 (Dec.), pp. 280–292.

Clark, W. E. Le Gros and Leakey, L. S. B.
1951 *The Miocene Hominoidea of East Africa* (Fossil Mammals of Africa, No. 1). London: British Museum (Natural History). 117 pp.

Clark, W. E. Le Gros and Powell, T. P. S.
1954 "On the thalamo-cortical connexions of the general sensory cortex of *Macaca*," *Proceedings of the Royal Society of London*, B, Vol. 141, pp. 467–487.

Clark, W. E. Le Gros and Thomas, D. P.
1951 *Associated jaws and limb bones of Limnopithecus macinnesi* (Fossil Mammals of Africa, No. 3). London: British Museum (Natural History). 27 pp.

Clements, E. M. B. and Zuckerman, S.
1953 "The order of eruption of the permanent teeth in the Hominoidea," *American Journal of Physical Anthropology*, Vol. 11, n.s., pp. 313–337.

Collias, N. and Southwick, C.
1952 "A field study of population density and social organization in howling monkeys," *Proceedings of the American Philosophical Society*, Vol. 96, pp. 143–156.

Connolly, C. J.

1950 *External Morphology of the Primate Brain.* Springfield, Ill.: Charles C. Thomas. 378 pp.

1953 "Brain morphology and taxonomy," *Anthropological Quarterly,* Catholic University of America Press, Washington, Vol. 26, pp. 35–65.

Frechkop, S.

1954a "Les relations génétiques entre les anthropomorphes et les autres singes," pp. 1029–1062 in Volume Jubilaire, *Victor van Straelen,* Tome II. Bruxelles.

1954b "Le port de la tête et la forme du crâne chez les Singes," *Bulletin Institut Royal des Sciences Naturelles de Belgique,* Vol. 30, pp. 1–11.

Gavan, J.

1953 "Growth and development of the chimpanzee: a longitudinal and comparative study," *Human Biology,* Vol. 25, pp. 93–143.

Heberer, G.

1952a "Oreopithecus bambolii Gervais und die Frage der Herkunft der Cercopithecoidea," *Zeitschrift für Morphologie und Anthropologie,* Bd. 44, pp. 101–107.

1952b "Die Fortschritte in der Erforschung der Phylogenie der Hominoidea," *Ergebnisse der Anatomie und Entwicklungsgeschichte,* Bd. 34 (2. Aufl.), pp. 499–637.

Hediger, H.

1954 *Skizzen zu einer Tierpsychologie im Zoo und im Zirkus.* Zürich: Büchergilde Gutenberg. 295 pp.

Hill, W. C. O.

1953a *Primates. Comparative Anatomy and Taxonomy.* I. *Strepsirhini.* Edinburgh: University Press. 798 pp.

1953b "Dental variations in the genus *Mandrillus* Ritgen," *Mammalia,* Vol. 17, pp. 208–218.

1954a "The female reproductive organs of *Tarsius,* with observations on the physiological changes therein," *Proceedings of the Zoological Society of London,* Vol. 123, pp. 589–598.

1954b "The blood-vascular system of *Tarsius,*" *Proceedings of the Zoological Society of London,* Vol. 123, pp. 655–694.

Hofer, H.

1953 "Ueber Gehirn und Schädel von *Megaladapis edwardsi* G. Grandidier (Lemuroidea), nebst Bemerkungen über einige airorhynche Säugerschädel und die Stirnhöhlenfrage," *Zeitschrift für wissenschaftliche Zoologie,* Bd. 157, pp. 220–284.

1954 "Beobachtungen am Hirnrelief der Aussenfläche des Schädels, am Endokranium und der Hirnform des südamerikanischen Nachtaffen *(Aotes,* Ceboidea)," *Berichte der Oberhessener Gesellschaft für Natur- und Heilkunde zu Giessen,* N.F. Naturwissenschaftliche Abteilung, Bd. 27, pp. 90–110.

Hurme, V. O. and Wagenen, G. van

1953 "Basic data on the emergence of deciduous teeth in the monkey *(Macaca mulatta),*" *Proceedings of the American Philosophical Society,* Vol. 97, pp. 291–315.

Hürzeler, J.

1954 "Zur systematischen Stellung von *Oreopithecus,*" *Verhandlungen der Naturforschenden Gesellschaft Basel,* Bd. 65, pp. 88–95.

Janson, H. W.

1952 *Apes and Ape Lore in the Middle Ages and the Renaissance.* London: The Warburg Institute, University of London. 384 pp.

Kälin, J.

1952 "Die ältesten Menschenreste und ihre stammesgeschichtliche Deutung," pp. 33–98 in *Historia Mundi,* 1. Bd. Bern: Francke Verlag.

1954 "Eine neue Untersuchungsmethode zur Morphologie des Primatenbeckens," *Bulletin Schweizerischen Gesellschaft für Anthropologie und Ethnologie,* 30. Jg., pp. 5–9.

Klenke, W.

1954 "Die stammesgeschichtliche Bedeutung der Variationen des menschlichen Gaumenfaltenmusters," *Zeitschrift für Morphologie und Anthropologie,* Bd. 46, pp. 1–11.

Krumbiegel, I.

1954 *Biologie der Säugetiere.* Krefeld: Agis Verlag. 355 pp.

KÜHLHORN, F.

1954 "Gefügegesetzliche Untersuchungen an Neuweltaffen," *Zeitschrift für Säugetierkunde*, Bd. 20, pp. 13–36.

MANN, W. M.

1954 "Report on the National Zoological Park," pp. 102–120 in *Annual Report of the Smithsonian Institution for 1953*. Washington: U. S. Government Printing Office. 481 pp.

MEDNICK, L. W.

1954 "The evolution of the ilium," *American Journal of Physical Anthropology*, Vol. 12, n.s., pp. 286–287.

MILLER, R. A.

1952 "The musculature of *Pan paniscus*," *American Journal of Anatomy*, Vol. 91, pp. 183–232.

OLSZEWSKI, J.

1952 *The Thalamus of the Macaca Mulatta. An Atlas for Use with the Stereotaxic Instrument.* Basel: S. Karger. 93 pp.

REMANE, A.

1954 "Methodische Probleme der Hominiden-Phylogenie II," *Zeitschrift für Morphologie und Anthropologie*, Bd. 46, pp. 225–268.

RENSCH, B.

1954 *Neuere Probleme der Abstammungslehre.* Stuttgart: Ferdinand Enke Verlag. 436 pp. (2. Aufl.)

RIESEN, A. H. and KINDER, E. F.

1952 *Postural Development of Infant Chimpanzees.* New Haven: Yale University Press. 204 pp.

ROBINSON, J. T.

1954a "The genera and species of the Australopithecinae," *American Journal of Physical Anthropology*, Vol. 12, n.s., pp. 181–200.

1954b "Phyletic lines in the prehominids," *Zeitschrift für Morphologie und Anthropologie*, Bd. 46, pp. 269–273.

SCHAEFFER, U.

1954 "Die Anzahl der Foramina infraorbitalia bei Primaten, insbesondere bei Anthropoiden und Mensch," *Zeitschrift für Morphologie und Anthropologie*, Bd. 46, pp. 12–23.

SCHULTZ, A. H.

1952a "Vergleichende Untersuchungen an einigen menschlichen Spezialisationen," *Bulletin der Schweizerischen Gesellschaft für Anthropologie und Ethnologie*, 28. Jg., pp. 25–37.

1952b "Ueber das Wachstum der Warzenfortsätze beim Menschen und den Menschenaffen," *Homo*, Bd. 3, pp. 105–109.

1953a "Man's place among the primates," *Man*, Vol. 53, pp. 7–9.

1953b "The relative thickness of the long bones and the vertebrae in primates," *American Journal of Physical Anthropology*, Vol. 11, n.s., pp. 277–312.

1954a "Studien über die Wirbelzahlen und die Körperproportionen von Halbaffen," *Vierteljahrsschrift der Naturforschenden Gesellschaft Zürich*, Bd. 99, pp. 39–75.

1954b "Die Foramina infraorbitalia der Primaten," *Zeitschrift für Morphologie und Anthropologie*, Bd. 46, pp. 404–407.

1954c "Bemerkungen zur Variabilität und Systematik der Schimpansen," *Säugetierkundliche Mitteilungen*, Bd. 2, pp. 159–163.

1955 "The position of the occipital condyles and of the face relative to the skull base in primates," *American Journal of Physical Anthropology*, Vol. 13, n.s. (in press).

SENYÜREK, M. S.

1953 "A study of the pulp cavities and roots of the lower premolars and molars of prosimii, Ceboidea and Cercopithecoidea," *Belleten* (Ankara), Vol. 17, pp. 321–365.

SERRA, O. DELLA

1952 *A sequência eruptiva dos dentes definitivos nos simios Platyrrhina e sua interpretaçao filogenética.* Thése, São Paulo. 98 pp.

SILER, J. F.

1951 *Annual Report of the Gorgas Memorial Laboratory, 1950* (82nd Congress 1st Session, House Document No. 10, Washington, D. C.).

STARCK, D.
1953 "Morphologische Untersuchungen am Kopf der Säugetiere, besonders der Prosimier, ein Beitrag zum Problem des Formwandels des Säugerschädels," *Zeitschrift für wissenschaftliche Zoologie*, Bd. 157, pp. 169–219.
STEINER, P. E.
1954 "Anatomical observations in a *Gorilla gorilla*," *American Journal of Physical Anthropology*, Vol. 12, n.s., pp. 145–179.
TEILHARD DE CHARDIN, P.
1952 "On the zoological position and evolutionary significance of Australopithecines," *Transactions of The New York Academy of Sciences*, Ser. II, Vol. 14, pp. 208–210.
TRATZ, E. and HECK, H.
1954 "Der afrikanische Anthropoide 'Bonobo,' eine neue Menschenaffengattung," *Säugetierkundliche Mitteilungen*, Bd. 2, pp. 97–101.
VALLOIS, H. V.
1954 "La capacité crânienne chez les primates supérieurs et le 'Rubicon cérébrale'," *Comptes rendus des séances de l'Académie des Sciences*, Tome 238, pp. 1349–1351.
WAGENEN, G. VAN
1953 "Age at menarche of the laboratory rhesus monkey," *Anatomical Record*, Vol. 112, p. 134.
WIENER, A. S.
1952 "Blood group factors in anthropoid apes and monkeys. I. Studies on a chimpanzee, 'Pan'," *American Journal of Physical Anthropology*, Vol. 10, n.s., pp. 372–375.
WIENER, A. S.; GAVAN, J. A.; and GORDON, E. B.
1953 "Blood group factors in anthropoid apes and monkeys. II. Further studies on the Rh-Hr factors," *American Journal of Physical Anthropology*, Vol. 11, n.s., pp. 39–45.
ZUCKERMAN, S.
1952 "An ape or the ape," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 81, pp. 57–68.
1953 "Correlation of change in the evolution of higher primates," pp. 300–352 in Huxley, Julian *et al.* (eds.), *Evolution as a Process*. London: Allen and Unwin. 367 pp.

Fossil Man and Human Evolution

LOREN C. EISELEY

Dr. Eiseley is Chairman of the Department of Anthropology at the University of Pennsylvania, and Curator of Early Man in the University Museum. He is a contributor of scientific articles on fossil man and related subjects to learned journals, as well as to literary magazines. He was former Vice-President of the American Anthropological Association, and Vice-Chairman of the Division of Anthropology and Psychology, National Research Council, 1950–1952.

INTRODUCTION

IN the sixties of the last century, two men examined the course of human prehistory, as it was then known, and proceeded to come to diametrically opposed conclusions. There would be nothing particularly remarkable about this observation except for one thing: both men had discovered the principle of Natural Selection independently and both were confirmed evolutionists. Their names were Charles Darwin and Alfred Russel Wallace—scholars destined to be remembered far beyond their century—yet, on the subject of man, they could not agree. Most people, if they have knowledge of this controversy at all, assume that Charles Darwin won the argument, but it has become ever more apparent in the last few years that, while the basis of discussion may have shifted a little, the truth is that the argument is still before us, if anything more powerfully than ever, and the same contentions are still unresolved.

A little less than one hundred years after the publication of *The Origin of Species*, anthropologists are arrayed on the same battlegrounds. Insignia on their standards may be slightly altered, but they fight the same weary battle, the lines wavering now this way and now that as a new fossil is revealed. Perhaps it is time for a military assessment to be written—time to examine the nature of the struggle and to ask what it is that we are endeavoring to demonstrate. Some have been in the trenches so long that they may well have forgotten, and the suspicion grows that there are others among us who do not know how they came into the redoubts which they defend so valiantly. It will do no harm, therefore, to review a debate which, smoldering since the nineteenth century, has re-emerged once more with renewed vigor in the year just past.

Nearly one hundred years ago, Charles Darwin and a little band of intrepid followers were involved in a dramatic effort to convince their fellow men not alone that evolution had taken place in the animal and plant world about them, but that man himself had arisen by natural processes of the same order, according to gruff old Adam Sedgwick, as those producing the crust on a kettle. Another scholar pondering the change of doctrine sighs wistfully as though loath to give up all hope, "The Creator is there but much farther off than we thought." Each of these remarks epitomizes in its own way the frightening shadow which passed over men's minds after the rise of the evolutionary philosophy. It is only now, after the passage of a century, that modern science is beginning to awaken to the fact that man, toppled unwillingly from his position of simple faith by the evolutionists, has in truth become one of the most unstudied and important enigmas in the whole realm of biology.

In their understandable eagerness to demonstrate the newly discovered principles governing the development of life, Darwin and his followers unconsciously minimized the distance stretching between man and his lowly cousins, the apes. The whole drama can be pretty well summed up in the clash between Darwin's pugnacious defender, Huxley, and Richard Owen, Britain's leading anatomist and wily defender of the established order. It was a battle that Owen fought unscrupulously and was destined to lose, yet Huxley's very triumph reveals the curious myopia which had descended upon nineteenth century science. It was a myopia which led to greater argumentative emphasis upon whether the brain of man resembled that of an ape physically rather than upon what might be contained in the two dissimilar heads mentally. "You may think," parodied Kingsley in *The Water-Babies*, "that there are other more important differences between you and an ape, such as being able to speak, and make machines and know right from wrong, and say your prayers, and other little matters: but that is just a child's fancy, my dear. Nothing is to be depended upon but the great hippopotamus test."[1]

It was perhaps inevitable, considering the time, place, and circumstances, that the attention of the Darwinists and their horrified audience should have been fixed upon the characters man shares with the animal world about him, or that enthusiastic converts should have striven to minimize and close up, to the extent possible, the gap which appeared to yawn between rational, thinking man and his remote relatives in the forest. The occupants of institutions for the feeble-minded, and even Lombrosian criminals, were being speculatively eyed as atavistic throwbacks to an earlier human stage; there is clear evidence in the writings of Darwin that early man was viewed as something akin to the gorilla. Science and theology both had become so immersed in their squabble over what physical resemblances did or did not demonstrate about man's origins, that the wonder and mystery of human achievement began to depart. It is to be said to the everlasting credit of Alfred Russel Wallace, therefore, that he raised a lonely voice of protest which scarcely would be heard until the passage of a hundred years. He has been called inconsistent and a romantic. He was all these things. But his inconsistency was sometimes the product of a formidable insight which could not rest comfortably with half-truths, either his own or those of anyone else. While his colleagues rested content with their laurels, he went on searching, pondering over "some fundamental law of development of which we have as yet no notion" (Marchant, 1916, p. 219). In the midst of giving Darwin sound advice on how to meet his critics, he was capable, in a kindly but direct fashion, of indicating his doubts that a particular argument had been either potent or satisfactory.

It was this restless, never-contented aspect of Wallace's personality which finally led him beyond the reach of his fellows. In his great age he grew opinionated and, for a scientist, some of his follies were conspicuous. Nevertheless, they were the inescapable accompaniment of that restless leaping mind which long ago in Ternate conceived the whole theory of Natural Selection in one lightning flash of feverish insight.

Longer and more intimately than any other of the great biologists Wallace had lived and sailed with savages. He had endured in small boats the sufferings of dangerous passages among the reefs and shoals of the Malay Archipelago. Somewhere out of these experiences had emerged a different conception of the savage brain than that entertained by the average Victorian scholar who was inclined to view natives as mental and moral fossils. By contrast, Wallace came to regard them as possessing minds little if in any degree inferior in natural endowment to civilized Westerners. This point of view marks him as diverging greatly from the orthodox outlook of his period. It also leads us directly to the contrasting paths taken by himself and Darwin over the question of human evolution. A summary will make the issue clear; furthermore, it is an issue which still confronts the student of human evolution today.

---

[1] A play on words involving the hippocampus minor.

THE DARWIN-WALLACE CONTROVERSY

To analyze the precise attitude held toward fossil man and the existing races, or toward fossil man and the existing great apes, by Darwin and his followers during the decades immediately following the publication of *The Origin of Species* (1859) and *The Descent of Man* (1871) is not an easy task. There are inconsistencies and confusion produced by attempts to equate the creatures of the fossil past with the forms of the living primates, as when Darwin quoted evidence to show that the La Naulette jaw, that of a Neanderthalian, was supposed to have possessed "enormous" projecting canines (Darwin, C., n.d., p. 425); or that some of the skulls of Australian aborigines showed, in the males, traces of a gorilloid sagittal crest (*ibid.*, p. 868). After making statements of this kind, however, Darwin seemed afterwards to have been impressed with certain criticisms by the Duke of Argyll and to have expressed a contradictory speculation (*ibid.*, pp. 443–444) that a formidable and huge primate might not have become social. "Hence it might have been an immense advantage to man to have sprung from some comparatively weak creature" (*ibid.*, p. 444).

Placing as he did so much emphasis on the struggle for existence, Darwin once more found himself embarrassed with the "weak creature" he had been forced to postulate. "These ancestors," he protested defensively, "would not have been exposed to any special danger, even if far more helpless and defenseless than any existing savages, had they inhabited some warm continent or large island, such as Australia, New Guinea or Borneo, which is now the home of the orang." Even here, however, Darwin was forced to invoke the "competition of tribe with tribe" along with the "inherited effects of habit," to bring about man's ascent to a position far above that of his nearest living relatives. Here at last we come suddenly upon the key point which, so far as human evolution was concerned, arrayed Darwin and Wallace upon opposing platforms. In the Darwinian philosophy, natural selection was not a principle of self-growth. It could produce only a relative superiority sufficient to maintain a given species in active competition with its enemies or give it at best some slight advantage in the life-struggle. In a sense, therefore, it was a self-limiting principle. How then, challenged Darwin's colleague, Wallace, did the human brain develop so far beyond what was necessary to secure the bodily safety and primitive needs of its possessor? "Natural Selection," maintained Wallace, "could only have endowed the savage with a brain a little superior to that of an ape, whereas he actually possesses one but very little inferior to that of the average members of our learned societies" (Wallace, 1869, pp. 391–392).

Wallace had reached this position by degrees so that he must have taken his other evolutionary colleagues by surprise. In 1864, in the *Anthropological Review*, he had set forth the idea that with the rise of man, natural selection was ceasing to act upon the body and was coming to act almost solely upon the human intelligence. Man, he contended, was old and had attained the upright posture long before the final changes in the skull and brain which characterize our living species. Other animals had continued to change and modify under evolutionary pressures; in man, by contrast, all but mental evolution had largely ceased. Man, in other words, had transferred to his mechanical devices the *evolution of parts* which characterizes the rest of the world of life. Even racial differences, in Wallace's view, were essentially survivals from the time when man was still a cultureless animal.

Now at the time of this first treatise Wallace was still a firm believer in the part played by natural selection in this process. He saw competition between groups of men as promoting by slow degrees the rise of better brains and a higher ethic. Darwin had expressed no objection to this, in fact had confessed admiringly "the great leading idea is quite new to me . . . yet I had got as far as to see with you, that the struggle between the races of man depended entirely on intellectual and moral qualities" (Darwin, F., Vol. 3, p. 90). It was only later that the disagreement came. Wallace's estimates of human antiquity did not bother the Darwinists, nor did his study of the rise of the human brain. He had clung carefully to the basic Darwinian precepts: insensible variations, selection through the struggle for existence among competing human groups. Then in 1869 he drastically altered his opinions (Wallace, 1869, pp. 359–394). For the first time in his career the co-discoverer of the principle of Natural Selection abandoned the attempt to explain human evolution by that hypothesis. Man's brain, the "primitive" brain of the living savage, houses abilities for which in his present state he has no need and which therefore, could not possibly have arisen through competition with others of his kind. Even in language, argued Wallace:

> "This view is supported by the fact that, among the lowest savages with the least copious vocabularies, the capacity of uttering a variety of distinct articulate sounds, and of applying to them an almost infinite amount of modulation and inflection, is not in any way inferior to that of the higher races. An instrument has been developed in advance of the needs of its possessor" (*ibid.*, p. 393).

Wallace, mincing words very little, intimated that he could only see in the rise of the human brain a directive spiritual force unaccounted for in purely mechanistic terms.

Darwin, with the great and generous tolerance which lighted the long life-pathway of the two men, wrote his kindly disagreement, saying half-humorously—half-wistfully, "I hope you have not murdered too completely your own and my child" (Marchant, 1916, p. 197). Thomas Huxley, by contrast, gave vent to a statement which today sounds strangely arrogant and anthropologically distorted. Wallace asked, said Huxley, "How were all or any of these faculties first developed, when they could have been of no possible use to man in his early stages of barbarism?" "Surely," Huxley responded, "the answer is not far to seek.

> . . . The lowest savages are as devoid of any such conceptions as the brutes themselves. What sort of conceptions of space and time, of form and number, can be possessed by a savage who has not got so far as to be able to count beyond five or six, who does not know how to draw a triangle or a circle, and has not the remotest notion of separating the particular quality we call form from the other qualities of bodies? None of these capacities are exhibited by men, unless they form part of a tolerably advanced society."

Warming to the task of demonstrating that artistic talents are the inevitable product of the struggle for existence, Huxley continued:

> "The experience of our daily life shows that the conditions of our present social existence exercise the most extraordinarily powerful selective influence in favour of novelists, artists, and strong intellects of all kinds; and it seems unquestionable that all forms of social existence must have had the same tendency . . ." (Huxley, 1871, pp. 471–473).

Coming in a time of ruthless industrial exploitation and grinding poverty among the English masses, these words have a strange ring. Huxley for once had been caught off-balance in a petulant and ill-tempered defense of his master—a defense which, so far as Wallace is concerned, was singularly inept, and lacking in the sort of facts and evidence which Huxley was fond of demanding from other people. Yet one must be fair. Huxley was writing in the same year in which Tylor introduced and defined the word "culture" in English anthropology. It is plain, as one examines the writings of practically all the Darwinian circle, that they often confused genetic endowment with cultural achievement, and that simple cultures constantly were being regarded as signs of inferior biological capacities. It is interesting to observe once more that, although Darwin and Huxley had *encountered* savages in the days of their voyages, Wallace alone had cast his lot and his fortunes for months and years among remote peoples and had sailed from island to island dependent upon their good will. Wallace had his peculiarities, but the kind of statement of which we have found Huxley guilty would never have been made by the old wanderer of the Malayan seas.

At this point we have arrived at an impasse. Darwin, wavering and uneasy about the true nature of the "struggle for existence" among men seemed hesitant as to whether to describe his fossil men as gorilloid or of some milder-tempered and weaker-bodied variety of primate. In spite of an occasional warning that the early human progenitor is not to be compared in exactitude with the living apes, he postulated that man must have achieved an upright posture from the semi-erect position of a chimpanzee or gorilla. These hesitations are of course perfectly understandable—the living primates are practically all that Darwin had with which to work. In the end, although he had earlier spoken disparagingly of Lamarck, he was forced to fall back upon the inherited effects of habit. His sole explanation for the rise of the human brain to its present exalted position lay in this vaguely Lamarckian statement and in the assumption of constant struggle between one group and another, in which the group with the greatest intelligence survived.

At first this latter interpretation appealed to Wallace. Later, as we have seen, it ceased to satisfy him but, in turning away from Natural Selection, he embraced a mysticism which he was never afterward to escape completely. As a consequence, the very genuine problem that he raised faded from men's minds with the full triumph of the Darwinian hypothesis, and his intimations of the possible great age of the human stock became an acceptable doctrine from which his name slowly disappeared.

Within the last year, however, in part stimulated by the discussions at the 1952 International Symposium on Anthropology supported by the Wenner-Gren Foundation, in part independently arrived at in the curiously expectant atmosphere which has hovered over the new Australopithecine discoveries, there has been a sudden renewal of the century-old question propounded by Wallace. Three times in a year's space the question of how man got his brain had been independently enunciated (Chance and Mead, 1953; Eiseley, 1953; Etkin, 1954). The query may be differently phrased and expressed in the technical jargon of a later and more specialized biology, but essentially it is the old question of 1869. This time it is being asked with a full recognition of the depths of our ignorance and with a realization that Wallace was right when he wrote in 1876 that

> "however great may have been the intellectual triumphs of the nineteenth century, we can hardly think so highly of its achievements as to imagine that, in somewhat less than twenty years, we have passed from complete ignorance to almost perfect knowledge on two such vast and complex subjects as the origin of species and the antiquity of man" (Wallace, 1876, p. 72).

The fact that close on to another century we are only now beginning to bestir ourselves over this question of the curious uniqueness of the human brain shows how long we have been silenced with the idea that the step from an ape to a man is as simple as the first evolutionists imagined or even wished it to be.

THE PILTDOWN SKULL

In a recently published paper (Eiseley, 1954b), we have been at some pains to show that the archeological discoveries in Europe during the late decades of the nineteenth century were a considerable disappointment to the evolutionists. In the first flush of their enthusiasm, the Darwinists plainly had hoped to demonstrate that the human line descended in Ice Age times into some sort of small-brained ancestor of definitely anthropoid affinities. Instead, they had seen the archeologists turn up a succession of Upper Paleolithic big-brained Cro-Magnons or equally big-brained Neanderthals. Those opposed to the Darwinian theory of human development found considerable sources of comfort in this situation. They lost no time in pointing out that most of our upper Pleistocene ancestors did not appear as morphologically primitive as certain of the existing races. Today, of course, we know that the time scale of the Pleistocene was being underestimated and that, in addition, the significance of Neanderthal man was not fully appreciated: at the time of which we speak only one calvarium had been described; the face, unfortunately, was missing.

There is no doubt that this first failure to find the sort of ancestral remains demanded by the Darwinian theory played its part in Wallace's elaboration of his hypothesis that, amidst constant and omnipresent organic change, man alone had to a marked degree escaped that law by the development of mind. Man, once he had attained a truly human level, might well remain physically the only unchanging creature in the midst of the universal alterations wrought by on-flowing time. "This will enable us to understand," Wallace went on to point out, "how the fossil crania of Denise and Engis agree so closely with existing forms, although they undoubtedly existed in company with large mammalia now extinct" (Wallace, 1895, p. 180).

The discovery of the apparently dissimilar fossils of Pithecanthropus and Piltdown presented the scientific world with two ostensible choices. The Java discovery seemed to bear out Wallace's contention that the attainment of upright bipedal progression had preceded the later skull changes consequent upon a slowly expanding brain. Moreover, Dubois' earlier estimate that Pithecanthropus belonged on a late Tertiary time horizon would not have clashed with Wallace's belief that

> "you must go to an enormous distance of time to bridge over the difference between the crania of the lower animals and of man" (Wallace, 1864, p. clxxxv).

Piltdown, on the other hand, with its *sapiens* brain-box and its anthropoidal lower face, suggested the possibility that the development of the brain had led the rest of the body in the course of evolution (Miller, 1928, p. 419). Pycraft (1917, p. 391) had even suggested that in spite of its well-developed brain, it had not fully attained the upright position. Since in the early years of its history, Piltdown had been given a dating almost as old as the Java discovery, the only way that the disparity between the two forms could be resolved was to assume that they represented two distinct lines of human evolution. This, of course, presented the additional anomaly of practically suggesting two distinctly different evolutionary forces at work. It is no wonder that the aged Wallace, who lived long enough to know of the Piltdown discovery, wrote to a friend: "The Piltdown skull does not prove much, if anything!" (Marchant, 1916, p. 347). Probably he was at least partially activated by a feeling that the skull did not fit his theory of human development, but in any case his doubts were to prove well-founded. In November of 1953 the scientific world was rocked by the news that the long-studied fragments of the Piltdown specimen, as well as the associated artifacts, represented a deliberate and unscrupulous hoax (Weiner, Oakley, and Clark, 1953). Portions of a *sapiens* cranium had been combined with half of the jaw of a recent orang in such a manner that key anatomical points which might have settled the controversy had been carefully destroyed.

The amount of subjective speculation indulged in for years over the Piltdown "fossil," and to which many leading authorities contributed, can now be viewed historically as a remarkable case history in self-deception. It should serve as an everlasting warning to science that it is not theologians alone who may exhibit irrational bias or give allegiance to theories with only the most tenuous basis in fact. That scientists in the early years of a new discipline should have been easily deceived is not nearly so embarrassing as the rapidity with which they embraced the specimen solely because it fell in with pre-conceived wishes and could be used to support all manner of convenient hypotheses. The enormous bibliography in several languages which grew up around the skull is an ample indication, also, of how much breath can be expended fruitlessly upon ambiguous or dubious materials. Remembering the *Mud Fog Papers,* one cannot but sigh with relief that there was not a Dickens around to immortalize the Piltdown story. Perhaps, on second thought, and for the permanent reduction of the scientific ego, it would have been a good thing had there been.

With the elimination of the Piltdown cranium as a valid fossil, a considerable re-organization of our thinking in regard to the nature of human evolution has become necessary. Nevertheless, it is a reorganization which still involves the two persistent questions raised by Wallace in the eighteen-sixties; namely, *how long did it take to turn an ape into a man?*, and secondly, *by what means were the enormous powers of the human mind evolved?*

Pithecanthropus had long since been elevated to a position in the somewhat ill-defined Middle Pleistocene of Java and all of the later discovered, big-browed, paleanthropic forms of man were apparently not greatly older, and some were much younger, than this. Moreover, in South Africa a constantly increasing array of primitive man-apes, possibly cultureless, and definitely sub-human in appearance, had been discovered stretching through the indefinite reaches of the lower Pleistocene. Were these creatures, or some group among them, the actual ancestors of men? Was true man, then, to be regarded as a very rapid emergent out of a lower Pleistocene array of ground-dwelling, bipedal apes?

Before attempting to review this situation, let us examine two statements of Wallace which will put the nature of the problem succinctly before us. Either, he said, man developing by natural selection into a specialized and unique organism must have arisen very early and "spread in dense waves of population over all suitable portions of the great continent—for this, on Mr. Darwin's hypothesis is essential to rapid developmental progress. . . ." or if, on the contrary, "continued researches in all parts of Europe and Asia fail to bring to light any proof of his presence [during the Tertiary period], it will be at least a presumption that he came into existence, at a much later date and by a more rapid process of development." In that case, Wallace continued, it will be a reasonable argument that man's origin "is due to distinct and higher agencies" (Wallace, 1876, pp. 64–65).

It should now be apparent, through these propositions of Wallace, where the rearrangement of our remaining human fossils is leading us. It is leading us straight toward Wallace's second proposition, though not necessarily to the acceptance of his idea of direct supernatural guidance in the evolution of man. If our briefly sketched confinement of the major rise of the human brain to the Pleistocene is even approximately correct, it would appear to demand some other evolutionary mechanism beyond that of the old Darwinian struggle of man with man or group with group. The movement would appear much too fast. It has something about it of the nature of a quantum step. Lest I seem to be favoring Wallace's point of view unduly, let me quote the words of three practical experimental scientists who find themselves concerned with the same problem. M. R. Chance and A. P. Mead say, "No adequate explanation has been put forward . . . to account for the development of so large a cerebrum as that found in man" (Chance and Mead, 1953, p. 395). Professor Etkin, although propounding a theory of his own about the early beginnings of man's mental faculties, admits with sincere humility that in his view "the origin of abstract thought, for example, mathematical reasoning, and of truly ethical behavior . . . are not explicable in the biological terms developed . . ." (Etkin, 1954, p. 140).

THE AUSTRALOPITHECINES

Considering these modernly expressed doubts of the experimental biologists, our re-examination of the human phylogeny in the light of the modern fossil evidence seems amply justified. Certainly the time appears past when simplistic assumptions about the competitive use of tools can be used to account for all aspects of the human mind. There is a sense of grinding inadequacy in this materialistic doctrine, particularly when, viewing the higher realms of man's endeavor in 1893, Robert Munro (1893,

p. 505) in an opening address before the British Association for the Advancement of Science remarked sententiously, ". . . imagination, conception, idealisation, the moral faculties . . . may be compared to parasites which live at the expense of their neighbours." It is no wonder, surveying this uninspired remark, that Whitehead once observed that the last twenty years of the nineteenth century represented one of the dullest periods in human thought since the close of the First Crusade.

The idea that all of the qualities which make man such a unique and remarkable creature could have been dismissed as a mere "rattle in the machinery" of a creature evolved solely by the dextrous use of a flint ax is appalling, not because it was enunciated sixty years ago, but because it reappears in anthropological discussions even today. The archeologist, in particular, must be on guard, for there is an understandable temptation to see in the development and multiplication of tools from their crude Pleistocene beginnings up to the present some kind of simulacrum or objectified representation of the state of the mind itself: simple brain, simple tools. The cumulative aspects of culture may be forgotten and the argument persuasively launched that a "tool" enables us to determine without any fancy metaphysical deduction the point at which a monkey has become a man.

Within limits this notion may have a certain degree of purely archeological validity, but it does not tell us very much about how the ancestral primate got into this tool-using activity, nor why, if he was so largely concentrated upon this aspect of life alone, he should not have gone merrily and independently along his own path to the present day, devoting his attention to the bashing out of his neighbors' brains instead of engaging in all that tremendous assortment of institutional activities which occupies most of his waking hours. Robert Munro, in dismissing the higher moral faculties of man as pretty but unimportant, was unwittingly disavowing the very nature of the human psyche: the creature lives on dreams and is in that sense unique. It is not the ax in the hand but the symbols flowing through the time tracts in the head that are the real tools of this creature.

Before pursuing this aspect of the mind further, however, we must descend the time ladder and, in the skulls which are the cast-off containers of the dream, strive to make out when, from the standpoint of Wallace's theory, the dream began. The evidence is not conclusive, but it may suffice to aid us in the resolution of a hundred-year-old controversy.

In the warm regions, theorized Wallace, "we may trace back the gradually decreasing brain of former races, till we come to a time when the body also begins materially to differ. There we should reach the starting point of the human family. Before that period he had not enough mind to preserve his body from change, and would, therefore, have been subject to the same comparatively rapid modifications of form as other mammals" (Wallace, 1864, p. xvii). Interestingly enough, this statement, written long before there was any fossil evidence to substantiate it, now appears for the first time to be corroborated at least in some degree by the increasingly disparate array of Australopithecine man-apes being turned up by the South African workers.

The later forms of paleanthropic man—now that *Eoanthropus* has been eliminated—vary little save in the degree of cranial advance throughout the latter half of Pleistocene times. They thoroughly justify Wallace's belief in the transformation of the skull as the enlarging brain promoted the last changes that man's body, according to the belief of the great evolutionist, was destined to undergo before it assumed its timeless aspect in the midst of universal change.

The newest cranium from the South African beaches is essentially merely another paleanthropic form on approximately the same level with *Homo rhodesiensis* or Solo Man (Drennan, 1954, pp. 879–884). ***Atlanthropus mauritanicus*** for the first time reported with Abbevillian cultural remains appears on the basis of preliminary reports to be probably another earlier big-brow ridged form of man (Hillaby, 1954). Only among the Australopithecines is a curious difference in size and appearance prevalent. We say this with full recognition of differences among authorities; differences even as to whether these creatures walked erect (Zuckerman, 1954), or whether (which is unlikely) they should be given so many generic appellations as have been applied to them. Still, when the number of species is reduced, when the likelihood that some at least are not human, even though perhaps bipedal, is duly considered, two things remain apparent: *they seem closer than any living apes to man even if relatives rather than on the direct line of ascent, and they show a surprising variety of physical form.* There are indications that some, at least, belong structurally at the Plio-Pleistocene border; one cannot escape the feeling that here at last we are approaching a confusing variety of ground apes who are disconcerting to our taxonomists for the very reason long ago intimated by Wallace. We have, in other words, stumbled into the world of essentially cultureless or almost cultureless proto-human types which are diverse in form because they represent evolution still at work *upon the parts of the body,* rather than upon the selection of mental patterns leading toward essential uniformity of other bodily characters.

We need not conclude, since most of these creatures appear to be Pleistocene (Peabody, 1954, p. 703), that we have reached the very bottom of the human ladder. Such forms as Heidelberg and *perhaps* the newly discovered *Atlanthropus* strongly suggest that more advanced and truly human forms were in existence in lower Ice Age times. Nevertheless, this in no way abrogates the significance of our main point; namely, that if living ground apes of a human cast were alive in the early and middle Pleistocene, it is unlikely that the rise of the true human stock can be assumed to be a great deal earlier. If such had been the case, one might assume that the competition on the world's open grasslands would have resulted in the earlier and more rapid extinction of the man-apes. It would thus appear that Wallace was right in his suggestion of 1876 that if man could not be shown to have dominated the Old World land mass in large numbers during the Tertiary, some other more rapid process of evolution than that envisaged in the Darwinian philosophy must have been at work in the production of man. This would appear to be equally true whether we assume modern man emerged directly from Neanderthaloid ancestors or whether, taking the mysterious and faceless crania of Swanscombe and Charente for evidence, we assume that the development of the *sapiens* brain lies somewhat farther back in time.

Having briefly examined the juxtaposition of the known human fossils, there is only one fact about human evolution which need deeply concern us, or draw our attention away from the spectacle of universal organic change, in order to trouble ourselves over the destiny of one solitary life form. It is the still-remaining puzzle posed by Wallace, as to what has brought the existing human races out synchronously upon so similar a mental platform, even though many have never competed with each other tool-wise. The nineteenth century, equating level of technology with level of biological ability, was never troubled by this question. It was sufficient for our grandfathers to say that we

have got
The Maxim gun
and they have not.

We of this generation have witnessed vast social changes, seen such forgotten marginal people as the Eskimo fly airplanes, and the sons of forest peoples attend Cambridge or Oxford. Darwin, thinking of survival by natural selection, could speak of "Esquimaux, with whom the art of fishing and managing canoes is said to be hereditary" (Darwin, F., Vol. 3, p. 90); C. Carter Blake could say in 1864, "Psychical endowments of a lower grade than those characterizing the Andamaners cannot be conceived to exist; they stand next to brute benightedness" (Blake, p. cxlviii). The world of the last century seemed fixed, the native was dying of the white man's diseases, and the Darwinists spoke assuredly of the time when he would be gone as surely as the Tasmanians or the vanishing orang.

Today, by a curious twist, there are times when it appears that it is the White world that is contracting. How is it, then, that men, remote from where the scientific revolution arose, practice its arts in remote jungles and obscure wastes where its whisper never came and where there can have been no competitive biological differences based on such a struggle? How is it that Wallace's dictum has held true that man in these remote districts had latent capacities very similar to, if not the equal of those possessed in the civilized centers of the world? This Negro, in other words, who paddled a dugout canoe along dark and tree-hung water-ways, this Indian who gestured naked on a lonely pinnacle at ships bound through the freezing waters of the Horn, possessed somewhere beneath the tangle of his unkempt hair the same pulsing electric patterns that in other lands have measured stars, or weighed evidence in seats of judgment, or twinkled like fireflies as the lines of a great poem woke its strange sad memories in the brain of man. All over the world before the fundamental verities men feel, bleed, die in not very dissimilar ways. It is not surprising that Wallace stood abashed before this mystery; the surprising thing is how few Victorians understood it; perhaps, ironically, their conscious superiority made their feats of colonization possible.

THE BIOLOGICAL HYPOTHESES

Biologists in general have avoided grappling with the question that troubled Wallace. Or, if they have done so, it has often been ineffectively in terms of generalities, or marred by the surviving confusion over biological potentialities, as contrasted with social heredity. As Etkin has pointed out (1954, p. 130), most writers start with at least a crude level of symbolic communication as *assumed*. The pre-adaptation or other explanation of the shift over from the purely *signal* communication of the animal to the linguistic activities of men is left unexplained for the simple reason that no one adequately has come to grips with the problem. It is the recognition of this fact that has led to renewed speculation in the year just past.

Chance and Mead (1953) have contended that the immature primate male, often forced to inhibit his sexual desires in a society like that of the baboons, for example, where a dominant old male is overlord, would be selected in terms of his ability to control his impulses and thus protect himself. As a consequence, the role of the brain cortex involved in such conscious control of his instinctive functions would be enhanced, and the consequent pre-adaptation perhaps lead on to other intellectual advantages than those allowing survival in a ferocious pack of primates ridden with intense male competition for dominance. The young male, in other words, learned to inhibit his sexual drives and bide his time against stronger opponents. I am inclined, however, to share Etkin's view that, interesting and provocative though this speculation is, and certainly not without applicability in some primate societies, as an explanation it seems scarcely adequate to account for the first steps in the development of the human brain. One might almost observe that if similar behavior patterns involved in the familial activities of various modern primates were the sole forces at work in the creation of the human psyche, the experiment would have been launched more frequently by nature.

As it stands, baboons are still baboons and macaques, macaques. If we do not try to extract a single cause from its matrix and let it carry the whole burden of explanation, it may be, of course, that we will someday be able to postulate from these comparative studies of living primates just what additional factor in the case of man may, among several accessory causes, have turned the trick. But we are far from that point today. The genuine and forthright willingness of Chance and Mead, and Etkin to grapple specifically with the problem, as well as to face the limitations of their data, is a healthy sign for the future.

Etkin draws a picture rather different from that of Chance and Mead and, so far as man is concerned, develops it further. He accepts the cortical control of sexual behavior emphasized by Chance and Mead as contributing to the socialization of the primates, but points out that intense male competition for dominance in polygamous groups "is not universal among primates" (Etkin, 1954, p. 131). He further observes critically that

> "Perhaps a more fundamental defect of the theory is that it is nonadaptational, making the various aspects of human intelligence incidental to selection in respect to other characteristics which, it should be pointed out, operate in the male sex only" (*ibid.*).

In the case of very early man, using the Australopithecines as a possible example, he contends that the absence of heavy canines in the males suggests less internal sexual competitiveness among males and, in addition, greater solicitude for the family. "The development of a hunting economy can occur, in an anthropoid," Etkin affirms (p. 136), "only if the male cooperates in feeding and caring for the young. The presupposition of monogamy for pre-cultural man which is here made is based on the impracticability of a single male operating successfully as protector and provider for many females." Etkin observes, therefore, that the "central feature of the social behavior of the 'hunter' anthropoid must be an integration of the male into the monogamous family unit in which he is the primary hunter." The anthropoid baby could no longer be cared for by the mother alone as in the old frugivorous arboreal world. Once given this new environment promoting male cooperation in the family and among other males, a whole new series of selective forces conducive to the improvement of the brain would have come into play. Ideational behavior would have promoted the emergence of language under the new difficult hunting conditions and the desirability of permanent familial relationships between the sexes would, Etkin believes, not alone have promoted the growth of language but the loss of a distinct oestrus phase in favor of a diffuse and extended sexual interest which may have further reduced the typical male primate patterns of aggression and dominance. With the emergence of even rudimentary speech, the social bond would be further strengthened. Relaxation of selection pressure for rapid maturation would follow upon a greater degree of familial permanency and, in its turn, tend to reduce male jealousy. Increased opportunities for learning among the young would follow.

Etkin is frank to admit that his approach is in some degree speculative, but no more so than many of the inferences we are forced to draw from comparative anatomy. His treatment has, it appears to the present writer, one great advantage over many of the anthropological theories brought forth to date: it is complex, not simplistic. It does not seize upon a single factor such as tools and attempt to make that factor carry the full weight of human development. Etkin, instead, emphasizes a design of interwoven and related processes all operating at once.

Nevertheless, being something in the nature of a pioneering attempt, it may be said to falter somewhat in the elucidation of just what pre-adaptations may have promoted the survival of the ancestral primate when he first reached the ground, what brought him there, and what aspects of his mind at that stage may have promoted the rise of symbolic communication. Most of these are still very difficult questions, and Etkin is not to be blamed if he stumbles slightly on this transitional threshold which he has duly and correctly noted that the anthropologist tends to avoid. It is plain, however, even in Etkin's excellent paper that he himself prefers to begin with a proto-human family which has already successfully divided its labor and responsibilities and has pretty thoroughly mastered its ground environment. In our next and concluding section we shall examine some of these points and try, as well, to suggest an answer to Wallace's final question; namely, if men, with all their cultural diversity are, throughout the world, so intellectually similar, how did they attain this status and how, moreover, did they attain it so much more rapidly than Darwin's theory would explain? With what, in his solitary environment, is the primitive contending that makes it possible for his descendants a generation or two later to take their places satisfactorily in the great universities of the world? If natural selection is indeed at the root of this process, it is a natural selection that Darwin never visualized and that drove Wallace to have recourse to divine guidance. The gap between man and ape is not as the early Darwinians saw it—a slight step between a gorilla and a Papuan, or a chimpanzee and a gibbering Hottentot. Instead, it stretches broad and deep as time itself.

CONCLUSION

It is a fact long noted by philosophers that time, as discussed among men, is always treated in the language of space. Time is "behind" us and "before" us; it is a river and it "flows," or one remembers an episode "far off" in the past. Without wishing to make too much of the figurative expressions of modern tongues, it is not without interest that the arboreal world presents space to the primate, and particularly to the brachiating, upright primate, in a more dangerous multi-dimensional way than is true of any other creature. Leaving aside the question of language for the moment, the world of the tree-dweller demands a constant assessment of space in a way unknown to the pronograde creature on the ground. The steady following of the sense impressions from the nose becomes impossible, and must be replaced by reliance on sight—and sight of the keenest stereoscopic variety. Moreover, this space is presenting constantly, to the animal in the act of swinging through it, a panorama of dangers and opportunities which are less the steady succession of things observed by a moving ground animal than they are the ups and downs and sideways and befores of the multi-dimensional tree world. Objects demand, in terms of mental imagery, much more accurate visual reporting and an ability of the mind to twist its attention at will and hold in clear perspective things which are not necessarily directly ahead but which may be important above or below in the next flying second.

A friend of mine once saw a newly-released gibbon hurl itself at a glass window through which it obviously expected to pass. In the very instant of contact with the glass, against which an ordinary animal traveling at such speed would have shattered itself, the gibbon, sensing its error, recovered. With the merest featherdown touch of feet and hands it caromed its flying body off the glass in a new direction and escaped disaster. The episode was a beautiful example of bodily coordination, but, in addition, it spoke volumes on the nature of the primate brain and eye. The vision was not all for what lay ahead. In the instant of unexpected contact with a solid, the brain, carrying some side image, knew where to divert the generated energy that was hurling it to destruction.

These acts have in them some of the insight, the flexibility of attention, the almost instantaneous internal reconstruction of external conditions which is involved in the manipulation of symbolic thought, that is, language in the other space world of time. We do not mean to imply incipient speech in the existing primates. We do, however, make bold to suggest that the arboreal environment and its demands may well have played a part in the creation of that ideational insight which is known to exist in our living relatives and which may lie close to the root of language as one of the preadaptations of our fathers of the forest world.[2] There is, at any rate, a remarkable analogy between the anthropoid comprehension of that world and what Chauncey Wright wrote long ago of language which "essentially consists in the power of turning back the attention from a suggested fact or idea to the suggesting ones . . . in place of the naturally passive following subserviency of the mind to the orders of first impressions or associations" (Wright, 1870, p. 296). In other words, the time tracts which, in the speechless anthropoid, can be but dimly peopled with visual memories grow rich under the flow of symbolic thought. The time world comes into its own and assumes the importance and reality of the world of space.

---

[2] Sillman (1953, p. 150) says something of great pertinence in this connection:

". . . The establishment of language is essentially the transference of image evaluation of all modes of experience into the auditory vocal sphere. An anatomical basis for the domination by the auditory sphere is suggested by Meyer's loop of the visual radiation to the temporal lobe.

"A further pre-human step in the direction of language has been revealed by the experiments of Cluver and Bucy. They found that monkeys whose temporal lobes were removed lost their sense of visual discrimination so that they did not know how to respond to previously familiar objects and would mouth them as infants do. In other words, even in lower primates, temporal lobe auditory reactions acquire dominance or act as an interpretive screen between consciousness and the various forms of sense perception."

But of that momentous crossing from the trees to the ground which is often assumed to be, as well, the passage into the world of symbolic thought and speech, we know, as yet, nothing at all. We are unsure as to what induced it, whether climatic circumstance, or the expansive powers of life itself as represented in the restless experimental habits of the primate brain. Professor Etkin is forced to take the "hunter" anthropoid for granted; and his system begins at this point. But *was* man a hunter, in any elaborate sense, when he descended upon the grass? It seems unlikely, and this may affect to some degree the validity of Etkin's comparison of the male ancestor's behavior to that of such a carnivore as the male wolf in the role of food provider. It is conceivable, since man is really an abnormal carnivore, that his first ventures upon the grass were descents into open parkland in search of seeds, grasshoppers, possibly even wild sorghums, and other items of this sort which could be harvested upon the ground. As yet, we do not have clear proof that even the Australopithecines were big game hunters, because the bones found in the sites from which their remains have been recovered may have been dragged in by hyenas. Our theories are to this extent assumptions which may or may not be true. In any case, the South African man-apes cannot be equated with the first primates who left the trees somewhere within Tertiary time. All of the existing great apes are essentially vegetarians, and indeed the arboreal brachiators have no other consistent source of food. Even the enormously powerful gorilla who has descended to the ground is a vegetarian forager and not a carnivore. It is at least worth some consideration that man is not likely to have been a meat-eater when he first came down from the trees but rather a somewhat omnivorous creature who only by degrees, as his numbers grew and his wit increased, turned to meat-eating in any extensive sense. Man's stomach is not that of a true meat eater. He does not possess the powerful digestive acids of the genuine carnivore, and this is why it was only with the discovery of fire that he can be said to have successfully unlocked the protein-rich food source represented by the swarming herds of the grasslands.

Man's interest in marrow and his known penchant for soft parts such as brains suggest that though he undoubtedly made some use of raw flesh in his bipedal adventure on the ground, he badly needed something that would serve as a substitute for the sort of stomach which was not his evolutionary birthright. Eventually he found it in fire. Man is thus to be seen once more as a strange anomaly among beasts, for he has been able to enhance his numbers and promote his rapid spread by literally stealing and transforming the energy of the grassland herds through the medium of fire. It is still of the utmost importance to know at what point this instrument came into man's hands, for it has undoubtedly done much to transform his habits and increase the rapidity of his diffusion (Eiseley, 1954). Although not in the beginning a true carnivore, his lack of purely instinctive controls and tremendous adaptability have enabled him to effect a transition in food habits which is unique on the planet.

The psychiatrist, Leonard Sillman (1953, p. 146), pointed out not long ago that "no other species [than man] comes into the world with so few fixed reactions for survival, knows less inherently how to maintain itself." It is for this reason that I remarked earlier in this paper that those who would disregard the higher mental characters of man, as side products of some kind of competitive struggle involving tools, have missed the real nature of the human transformation. It is this "new" brain, denuded of precise instinctive responses, growing in a curious mighty spurt during the first few *months after birth that has created man and set him off from his nearest relatives.* Evolution by infinitesimal competitive degrees which brings everyone out on the same potential intellectual level cannot be attributed to mechanical tool-using competition. Instead, it implies: (1) Either a true orthogenetic trend in all men, or (2) some aspect of the environment which is selective and yet common to all men everywhere.

This latter factor, if it is indeed the true explanation of the genetic mental equality of people all over the world, can only rest in the nature of man himself. In other words, the factor missed by Darwin and Wallace both, is the societal nature of human beings. The nineteenth-century biologists were confused by man because they were so taken up with the struggle for existence in the animal world that they rarely glimpsed the fact that in the case of man there was a second invisible environmental world in which he existed and which replaced for him his lost instinctive adjustments. For the first time a creature had appeared in nature who created his own world in his head, but by communication and mutual similarity of mind made of many heads a little universe in which man existed apart from exterior nature. It was this societal universe, with its institutions supplanting his lost instincts, which directed his activities. Invisible universe of dreams, it was this environment for which he was being selected in each society since the first glimmerings of that enormous change began. The naked, frail, denuded creature of which Sillman speaks could not have survived alone. In all those first societies of the years of transitional passage from the ape to the human world, the protective buffering of society for that frightened dawning consciousness must have been tremendously important. Moreover, those intellectually most able to adjust to, as well as to create, this secret universe in the mind of man, would have had the greatest opportunities for survival. Thus, the elaboration of the primary tool of *all* societies—language—went forward unceasingly. Whatever powers controlled the process, whatever institutions might arise *in a given group, in the end there was only* one society—the human creation in which man moved and had his being and which nurtured, in no matter what diverse ways, the essential nature of the societal creature. As Dobzhansky and Montagu (1947, p. 587) have very ably remarked:

> "An animal becomes adapted to its environment by evolving certain genetically determined physical and behavioral traits; the adaptation of man consists chiefly in developing his inventiveness, a quality to which his physical heredity predisposes him and which his social heredity provides him with all the means of realizing."

Rather than seeing a succession of societies graded in a series of stages leading up to Western civilization with its elaborate technology (based even among ourselves largely on the invention and use of the scientific method within the last three centuries), rather than judging the capabilities of different races on this basis, it should now be plain that the great basic innovation among all varieties of mankind was the production of the socio-cultural world itself. For this, man everywhere, whether in the far Arctic or the jungles of the Amazon, has been adapted unceasingly. It is the cultural beliefs and excrescences which vary, flux, and flow unceasingly, without, so far as we can judge, affecting man's native ability to learn the use of any tool from the hydrogen bomb to the spear thrower. The close equality of intellect seems to center around the ability of all men to use the one great socializing instrument; namely, language. Perhaps it is not surprising that Wright's remark of 1870 (pp. 295–296) that

> "a psychological analysis of the faculty of language shows that even the smallest proficiency in it might require more brain power than the greatest proficiency in any other direction, . . ."

received so little attention, even though it was once referred to by Darwin.

It would thus appear, even though we are far from understanding the details, that the omnipresent selective force overlooked by Wallace, and which led him aside upon a somewhat mystical path, was the unseen environmental pressure implicit in the nature of society itself, rather than its individual cultural manifestations. All surviving races of mankind have, therefore, apparently been subjected to this selection to an approximately equal degree.

In answering Wallace's objection to what he regarded as a fatal defect in Darwin's treatment of man, it must be recognized that there are several aspects of man's mental life which both Etkin and Eiseley regard as somewhat mysterious but which there is not space to discuss here. Since, however, they are rather equally distributed (allowing for cultural differences) among all peoples, they do not affect the general conclusions expressed. We must, however, take note that the precise length of time involved in the production of the living species of man is still somewhat problematical. There has been a recent assumption that he is surprisingly young—a supposition that gained strength after the elimination of the Piltdown skull. There still remain, however, the faceless skulls from Swanscombe and Fontechevade which hint strongly of *sapiens* affinities and whose datings have so far withstood all challenge. If Swanscombe, of second interglacial age, should prove to be an ancestral *Homo sapiens,* we must repeat that it will be impossible to regard the Pleistocene Australopithecines as any more than a side branch, and perhaps not even of assured human status, in spite of some human anatomical traits. In that case, we shall expect eventually to turn up creatures of possibly clear human affinities in the Pliocene. The scales at the moment are trembling but have not dipped conclusively toward either point of view. Discoveries either technical, in terms of refined measurements of time, or in the shape of new fossils should clarify this situation before long. In either case, it would appear that the evolution of the human brain has taken a shorter length of time than Wallace supposed in the older evolutionary terms of 1864. Much, in terms of time, depends upon the way in which the modern form of man was drawn out of the elder stock. Man's curious larval nakedness and extended infantile helplessness hint at pedomorphic changes whose mechanisms are ill-understood.

In the introduction to this paper, we spoke of the necessity of an assessment of our position. Perhaps it lies partly in the firm recognition of the depths of our ignorance. Even now we know practically nothing of the early dietary of the grassland primates—on what, for example, *Paranthropus crassidens* may have been chewing with those enormous molars, and with temporal muscles so massive that they demanded a sagittal crest. It is just possible that these characters are not an adjustment to flesh eating at all.

Certainly the subject is open to analysis. We should know a great many things about the East African savanna that we do not know—possible foods; how much fire may have altered vegetation in post-glacial times—all these things are imperfectly understood. Finally, what must have been the frightening withdrawal of instinct in man and its replacement by the culture-building brain is a passage that the Darwinian world failed to grasp or appreciate clearly. Yet Sillman was right when he called it one of the cruelest and withal most generous endowments ever visited upon a living creature by a mysterious providence. It has surrounded him with an invisible sustaining world of pity and dignity and peace which, however much man may still struggle in the toils of his animal nature, was never built by the grossly personal selection of the stone ax and the spear. In that judgment, Wallace was correct; the world of man is a flowing world of dreams and symbols which he created long ago and which will last as long as man is man. In no other world can he now live. But the key to the secret doorway by which he came into this world is still unknown. The fortunate thing in terms of modern anthropology is that we know the disparity between man and ape is great, not small. And in that disparity of mind is locked a mystery which will not be yielded up except by serious and profound analysis. Of this also the modern anthropologist is increasingly aware.

REFERENCES

Bartholomew, George A., Jr. and Birdsell, Joseph B.
1953 "Ecology and the Protohominids," *American Anthropologist,* Vol. 55, No. 4, pp. 481–498.

Blake, C. Carter
1864 "On the Alleged Peculiar Characters and Assumed Antiquity of the Human Cranium from Neanderthal," *Anthropological Review,* Vol. 2, pp. cxxxix-clvii.

Broom, R.
1950 "The genera and species of the South African fossil ape-men," *American Journal of Physical Anthropology,* Vol. 8, n.s., No. 1, pp. 1–14.

Broom, R. and Robinson, J. T.
1950 "Note on the Skull of the Swartkrans ape-man Paranthropus crassidens," *American Journal of Physical Anthropology,* Vol. 8, n.s., No. 3, pp. 295–304.

Chance, M. R. A. and Mead, A. P.
1953 "Social Behavior and Primate Evolution," pp. 395–439 in *Symposia of the Society for Experimental Biology, No. VII, Evolution.* New York: Academic Press. 448 pp.

Clark, W. E. Le Gros
1950 "New Palaeontological Evidence Bearing on the Evolution of the Hominoidea," *Quarterly Journal of the Geological Society of London,* Vol. CV, pp. 225–264.

Cole, Sonia
1954 "The Prehistory of East Africa," *American Anthropologist,* Vol. 56, No. 6, pp. 1026–1050.

Dart, Raymond A.
1954a "The Adult Female Lower Jaw from Makapansgat," *American Anthropologist,* Vol. 56, No. 5, Part 1, pp. 884–888.
1954b "The Second, or Adult, Female Mandible of Australopithecus Prometheus," *American Journal of Physical Anthropology,* Vol. 12, No. 3, pp. 313–343.

Darwin, Charles
n.d. *The Origin of Species and the Descent of Man.* New York: Modern Library Edition. 924 pp.

Darwin, Francis
1888 *The Life and Letters of Charles Darwin.* London: John Murray. 3 vols.

Dobzhansky, Theodosius and Montagu, M. F. Ashley
1947 "Natural Selection and the Mental Capacities of Mankind," *Science,* Vol. 105, pp. 587–590.

Drennan, M. R.
1954 "Saldanha Man and his Associations," *American Anthropologist,* Vol. 56, No. 5, Part 1, pp. 879–884.

Ehrich, Robert W. and Henderson, Gerald M.
1954 "Concerning the Piltdown Hoax and the Rise of a New Dogmatism," *American Anthropologist,* Vol. 56, No. 3, pp. 433–435.

Eiseley, Loren C.
1953 "Fossil Man," *Scientific American,* Vol. 189, No. 6, pp. 65–72.
1954a "Man the Fire-Maker," *Scientific American,* Vol 191, No. 3, pp. 52–57.
1954b "The Reception of the First Missing Links," *Proceedings of the American Philosophical Society,* Vol. 98, No. 6, pp. 453–465.

Etkin, William
1954 "Social Behavior and the Evolution of Man's Mental Faculties," *The American Naturalist,* Vol. LXXXVIII, pp. 129–142.

Hill, W. C. Osman
1954 *Man's Ancestry.* London: William Heineman. 172 pp.

Hillaby, John D.
1954 "Bone May Be Clue to Ancient Puzzle," *New York Times,* Nov. 28.

Hooijer, Dirk Albert
1951 "The geological age of Pithecanthropus, Meganthropus and Gigantopithecus," *American Journal of Physical Anthropology,* Vol. 9, n.s., No. 3, pp. 265–282.

HOWELL, F. CLARK

1951 "The place of Neanderthal man in human evolution," *American Journal of Physical Anthropology*, Vol. 9, n.s., pp. 379–416.

1952 "Pleistocene Glacial Ecology and the Evolution of 'Classic Neanderthal' Man," *Southwestern Journal of Anthropology*, Vol. 8, No. 4, pp. 377–410.

1954 "Hominids, Pebble Tools and the African Villafranchian," *American Anthropologist*, Vol. 56, No. 3, pp. 378–386.

HUXLEY, THOMAS H.

1871 "Mr. Darwin's Critics," *The Contemporary Review*, Vol. 18, pp. 443–476.

KINGSLEY, CHARLES

n.d. *The Water Babies*. New York: Grosset and Dunlap. 244 pp.

MARCHANT, JAMES

1916 *Alfred Russel Wallace: Letters and Reminiscences*. New York: Harpers. 475 pp.

MILLER, GERRIT S.

1928 "The Controversy over Human 'Missing Links'," *Proceedings of the United States National Museum (for 1928)*, pp. 413–465.

MONTAGU, M. F. ASHLEY

1952 "Neanderthal and the modern type of man," *American Journal of Physical Anthropology*, Vol. 10, n.s., No. 3, pp. 368–370.

1955 "Time, Morphology, and Neoteny in the Evolution of Man," *American Anthropologist*, Vol. 57, No. 1, pp. 13–27.

MUNRO, ROBERT

1893 "Anthropology" (Opening address before the Anthropology Section of the British Association for the Advancement of Science, 1893), *Nature*, Vol. 48, pp. 503–508.

MURRAY, RAYMOND W.

1954 "The Place of the 'Australopithecinae' among Human Fossils," *Proceedings of the Indiana Academy of Science for 1953*, Vol. 63, pp. 47–53.

OAKLEY, KENNETH P.

1954 "Dating of the Australopithecinae of Africa," *American Journal of Physical Anthropology*, Vol. 12, n.s., No. 1, pp. 9–28.

PEABODY, FRANK E.

1954 "Travertines and Cave Deposits of the Kaap Escarpment of South Africa, and the Type Locality of 'Australopithecus Africanus' Dart," *Bulletin of the Geological Society of America*, Vol. 65, pp. 671–706.

PYCRAFT, W. P.

1917 "The Jaw of Piltdown Man," *Science Progress*, Vol. 11, pp. 389–409.

ROBINSON, J. T.

1952a "The Australopithecine-Bearing Deposits of the Sterkfontein Area," *Annals of the Transvaal Museum*, Vol. XXII, Part I, pp. 1–19.

1952b "Some Hominid Features of the Ape-Man Dentition," *Official Journal of the Dental Association of South Africa*, March 15, pp. 1–12.

1953a "Meganthropus, australopithecines and hominids," *American Journal of Physical Anthropology*, Vol. 11, n.s., No. 1, pp. 1–38.

1953b "Telanthropus and its phylogenetic significance," *American Journal of Physical Anthropology*, Vol. 11, n.s., No. 4, pp. 445–501.

1954a "The genera and species of the Australopithecinae," *American Journal of Physical Anthropology*, Vol. 12, n.s., No. 2, pp. 181–200.

1954b "The Australopithecine Occiput," *Nature*, Vol. 174, p. 262.

1954c "Phyletic lines in the Prehominids," *Zeitschrift für Morphologie und Anthropologie*, Vol. 46, No. 2, pp. 269–273.

SILLMAN, LEONARD

1953 "The Genesis of Man," *International Journal of Psychoanalysis*, Vol. 34, pp. 146–152.

SINGER, RONALD

1954 "The Saldanha Skull from Hopefield, South Africa," *American Journal of Physical Anthropology*, Vol 12, No. 3, pp. 345–362.

STRAUS, WILLIAM L., JR.

1949 "The Riddle of Man's Ancestry," *The Quarterly Review of Biology*, Vol. 24, No. 3, pp. 200–223.

STRAUS, WILLIAM L., JR.—Cont'd

1950 "On the zoological status of Telanthropus capensis," *American Journal of Physical Anthropology*, Vol. 8, n.s., No. 4, pp. 495–498.

1954a "The Great Piltdown Hoax," *Science*, Vol. 119, No. 3087, pp. 265–269.

1954b "Closing Remarks," *Human Biology*, Vol. 26, No. 3, pp. 304–312.

TAPPEN, NEIL C.

1953 "A Mechanistic Theory of Human Evolution," *American Anthropologist*, Vol. 55, pp. 605–607.

TEILHARD DE CHARDIN, PIERRE

1952 "On the Zoological Position and the Evolutionary Significance of the Australopithecines," *Transactions of The New York Academy of Sciences*, Ser. II, Vol. 14, pp. 208–210.

VALLOIS, HENRI V.

1949 "The Fontechevade fossil men," *American Journal of Physical Anthropology*, Vol. 7, n.s., No. 3, pp. 339–362.

1952 "L'Homme de Fontechevade et les Praesapiens," *Acts of the Fourth International Congress of Anthropological and Ethnological Sciences, Vienna 1952*, Tome 1, pp. 103–104.

1954 "Neandertals and Praesapiens," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 84, Part II, pp. 1–20.

WALLACE, A. R.

1864 "The Origin of Human Races and the Antiquity of Man Deduced from the Theory of 'Natural Selection'," *Anthropological Review*, Vol. 2, pp. clviii–clxxxvii.

1869 "Geological Climates and the Origin of Species," *The Quarterly Review*, Vol. 126, pp. 359–394.

1876 "Difficulties of Development as Applied to Man," *Popular Science Monthly*, Vol. 10, pp. 60–72.

1895 *Natural Selection and Tropical Nature*. London: Macmillan and Company. 492 pp.

WASHBURN, S. L.

1950 "The Analysis of Primate Evolution with Particular Reference to the Origin of Man," pp. 67–78 in *Symposia On Quantitative Biology*, Vol. XV, Cold Spring Harbor, Long Island, New York. 415 pp.

1953 "The Piltdown Hoax," *American Anthropologist*, Vol. 55, No. 5, Part 1, pp. 759–762.

WATSON, D. M. S.

1953 "Africa and the Origin of Man," *American Scientist*, Vol. 41, No. 3, pp. 427–438.

WECKLER, J. E.

1954 "The Relationships between Neanderthal Man and Homo Sapiens," *American Anthropologist*, Vol. 56, No. 6, pp. 1003–1025.

WEINER, J. S.

1955 (in press) *The Piltdown Forgery*. Oxford: Oxford University Press.

WEINER, J. S. and OAKLEY, K. P.

1954 "The Piltdown fraud: available evidence reviewed," *American Journal of Physical Anthropology*, Vol. 12, n.s., No. 1, pp. 1–8.

WEINER, J. S.; OAKLEY, K. P.; and CLARK, W. E. LE GROS

1953 "The Solution of the Piltdown Problem," *Bulletin of the British Museum (Natural History); Geology*, Vol. 2, No. 3, pp. 141–146.

WRIGHT, CHAUNCEY

1870 "The Limits of Natural Selection," *The North American Review*, Vol. 111, pp. 282–311.

ZUCKERMAN, S.

1950 "Taxonomy and Human Evolution," *Biological Reviews*, Vol. 25, pp. 435–485.

1954 "Correlation of Change in the Evolution of the Higher Primates," pp. 300–352 in Huxley, Julian, *et al.* (eds.), *Evolution as a Process*. London: George Allen and Unwin. 367 pp.

Old World Archeology and Prehistory

LAURISTON WARD

Mr. Ward is Curator of Asiatic Archaeology at the Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, Massachusetts. He is President of the Council for Old World Archaeology, and Chairman of the American School of Prehistoric Research. His publications include: "The Prehistoric Period," in Encyclopaedia of World History, William L. Langer (ed.), 1940; and "The Relative Chronology of China through the Han Period," in Relative Chronologies in Old World Archeology, Robert W. Ehrich (ed.), 1954.

THERE has been a very marked increase in archeological activity throughout the Old World during the past three years. In fact there is so much to report, in such a vast territory, that any really comprehensive survey within the compass of a few pages is obviously out of the question. The best that can be done is to select for comment some of the more important work, in the way of excavation, research, meetings, and publication, with the hope that this may give a representative over-all picture of the advances made by archeology, along a very broad front, in an area that comprises more than half the world.

GENERAL ACTIVITIES

In any appraisal of archeological activity during the years 1952, 1953, and 1954, the most outstanding fact to be noted is probably the persistent, though happily diminishing, effect of the last war and, perhaps even more, the influence of the present state of "cold war." This has remained essentially a period of recovery. The physical plant of archeology, in many countries, was badly damaged during the Second World War. The work of digging in the ruins of bombed museums and the salvaging of collections is now almost over. Rebuilding has proceeded at a slower pace. However, the increasing availability of funds for archeological work has resulted in the reopening of many museums and schools and the revival of long-standing projects in certain areas. For example, the German Schools at Athens and Rome have reopened their headquarters and the French have resumed operations in Syria, the Germans in Turkey, the British in Jordan, and the Italians in Crete.

A still more encouraging sign is the revival of important periodicals that were suspended during the war and the inauguration of many new journals and learned society serial publications. As examples of the former should be mentioned the resumption of the *Fasti Archeologici*, the *Archaeologisches Jahrbuch*, *Archaeologischer Anzeiger*, *Germania*, and the *Archiv für Orientforschung*. Among the new periodicals are such valuable additions as *Eiszeitalter und Gegenwart* in Germany; *Orientalia Suecana* in Sweden; *Palaeohistoria* and *Annual Egyptological Bibliography* in Holland; *Quaternaria* and *Sibrium* in Italy; *Archaeologia Austriaca* and *Veröffentlichungen der Urgeschictlichen Arbeitsgemeinschaft in der Anthropologischen Gesellschaft in Wien* in Austria; *Archeologické Rozhledy* and *Anthropozoikum* in Czechoslovakia; *Fontes Praehistorici* in

Poland; *Libyca* in Algeria; *Bulletin of the South African Archaeological Society; Anatolian Studies* in Turkey; *Les Annales Archéologiques de Syrie; Israel Exploration Journal; Palaeologia* in Japan; *K'o-hsüeh T'oung-pao* (Science Correspondence) in China; and the *Bulletin of the Department of Archaeology and Anthropology of National Taiwan University* in Formosa.

In addition to these and others, special attention should be called to a major undertaking, the *Inventaria Archaeologica*, directed by M-E. Mariën under the auspices of the International Congress of Prehistoric and Protohistoric Sciences, the purpose of which is the publication and illustration of well-documented artifacts characteristic of various prehistoric and historic cultures. This will be issued in sections, in different countries (somewhat on the model of the *Corpus Vasorum Antiquorum*). The first section was published in Antwerp in 1953.

All this news is definitely encouraging. On the other side of the picture, however, it must be stated that international tensions due to the last war have not altogether disappeared, in spite of the fact that German scholars, for example, are now beginning to work shoulder to shoulder with their colleagues in what were once enemy countries and that the next session of the International Congress of Prehistoric and Protohistoric Sciences, in 1958, will be held in Germany. Furthermore, and much more serious, the learned world, like the political, is fundamentally divided into two camps, between which there is little or no communication. The archeologists of the Soviet Union and the satellite countries are operating independently of the West. Correspondence between former friends on both sides of the Iron Curtain is largely impossible. Publications are exchanged with difficulty, cooperation is nearly nil, and it is seldom that delegates from countries in the Russian orbit attend conventions held in Western Europe. A striking exception was the appearance of a Russian delegation at the meeting of the International Congress of Orientalists in Cambridge, England, in the Summer of 1954, and it may be hoped that this indicates a possible change of policy. However, the fact remains that archeological research suffers badly from the lack of that personal contact and interchange of ideas that is so essential for the solution of the problems of prehistory.

Notwithstanding this handicap, the years 1952 to 1954 were noteworthy for a number of meetings of Congresses and other bodies which contributed materially to the successful progress of archeology. Among these a leading place should be assigned to the International Symposium on Anthropology, organized by the Wenner-Gren Foundation for Anthropological Research, under the chairmanship of A. L. Kroeber. Although this did not take place in the Old World—it was held in New York, June 7 to June 20, 1952—the participants came from many countries and the program itself was worldwide in its scope, consisting of a very thorough and detailed appraisal of the existing state of all branches of anthropology, including of course archeology. This gathering, unique in its conception and highly successful in its carrying out, resulted in two important publications, *Anthropology Today, an Encyclopedic Inventory*, containing all the papers presented at the Symposium, and *An Appraisal of Anthropology Today* which presents a transcript of the discussion and criticism of the papers by the participants (Kroeber and others, 1953; Tax *et al.*, 1953).

Other events of interest to archeologists in the year 1952 were the meetings of the International Congress of Anthropological and Ethnological Sciences, in September at Vienna, the next session of which will be held in Philadelphia in September 1956; the 19th International Geological Congress at Algiers; and the Second Pan-African Prehistoric Congress, which also took place at Algiers, September 29 to October 4. The latter meeting was a worthy successor to the First Pan-African Prehistoric Congress, which was held at Nairobi in 1947 and the results of which were published in 1952 (Leakey (ed.), 1952). Ninety papers were presented, covering all phases of African prehistory, and their publication, announced for early 1955, will whet still further the interest in the third session of the Congress, to be held in Livingstone, Northern Rhodesia, in July 1955.

Further light was shed on the prehistoric past by papers read at the Fourteenth Prehistoric Congress of France, held at Strasbourg in July 1953, and the Fourth Congress of the International Association for the Study of the Quaternary (INQUA), which met at Rome and Pisa, in August and September 1953. Another important gathering in the same year was the Fourth Far-Eastern Prehistory Congress, which took place in Manila in November 1953, as a division of the Eighth Pacific Science Congress (Anonymous, 1953d). This was significant not only for the area of its interest but also because it saw the birth of a new archeological organization, the Far-Eastern Prehistory Association, devoted to furthering archeological study and field work in Eastern and Southeastern Asia and Oceania. The Council of this body consists of leading representatives from the many countries in the area; the Chairman of the Executive Committee is Bernard P. Groslier of Saigon, the Secretary is Roger Duff of Christchurch, New Zealand, and the Honorary Chairman, H. Otley Beyer of Manila.

The year 1954 was marked by the meeting of the Fourth International Congress of Prehistoric and Protohistoric Sciences, in April at Madrid. This occasion drew together some two hundred and fifty representatives from thirty countries and did more to advance archeological work and to cement friendly relations and cooperation between archeologists than any other event in the past few years. Many new discoveries were announced and old problems reconsidered in the 157 papers presented at the session. The Spanish hosts of the Congress provided a very comprehensive program, including several excursions to sites which it would be difficult to visit in any other way, notably the rock pictures of the Spanish Levante and most of the famous Paleolithic caves in the Cantabrian region of Northern Spain. In August of the same year the International Congress of Orientalists met in Cambridge, England, and the International Federation of Associations for Classical Studies met in Copenhagen (Thompson, 1954).

In most of the countries of the Old World, government plays a larger part in the initiation and control of archeological work than it does in the United States. This has been increasingly evident in the period now under consideration. Without calling the roll by countries, it suffices to say that almost everyhere there has been great activity on the part of governmental bodies, in the way of preservation and restoration of monuments, of grants for research and education, and of stimulation of excavation. One particular feature of these operations calls for special attention. That is the growing practice of conducting intensive archeological reconnaissance and test digging in areas where sites are about to be destroyed by construction projects. Here the Soviet Union has led the way. It is standard procedure in Russian territory to include archeologists in the advance guard of engineers who survey the ground before commencing a major hydroelectric or irrigation project, and in this way during the past few years much valuable information has been obtained and published. In some cases, the work has even been delayed or the plans have been altered to prevent the loss of irreplaceable sites. This is particularly true in Russian Turkestan.

Another phase of archeological work on a national scale is the growing tendency to coordinate all the archeological activities of a country through the creation of some institution or institutions not directly under governmental control. Here one example must suffice. The Council for British Archaeology (C.B.A.) was organized in 1944 as part of a scheme for the planning of post-war archeology in Britain. Since then it has grown rapidly and now performs a truly surprising number of functions. Reference to the last annual report (Anonymous, 1954) shows that its membership includes 16 national societies, 148 county and local societies, 13 national museums and federations, 31 county and local museums, and 13 universities. Its funds come from *subscriptions and a grant-in-aid by the British Government. During the year ending June 30, 1954, the C.B.A., either directly or through the agency of its member institutions, engaged in the prosecution of archeological and scientific research, the stimulation of excavations, the support of the government's efforts for the preservation of ancient monuments and historical buildings, the promotion of archeological publication, the organization of summer schools and field training schools, and the general education of the public in archeological matters. Above all, with a minimum of financial resources and also with a minimum of outright authority, the C.B.A. has succeeded in coordinating all the work of archeologists in Great Britain and adding greatly to the progress of that work. This is certainly a splendid showing.

A recent factor of considerable importance in archeological affairs is the United Nations Educational, Scientific, and Cultural Organization (UNESCO). This international body engages in many activities, some of which have a very direct bearing on archeology. In particular, the International Committee on Monuments, Artistic and Historical Sites, and Archaeological Excavations (which operates within the Museums and Historic Monuments Divisions of UNESCO) has been very busy during the past three years. The Committee wrote the draft of the International Convention for the Protection of Cultural Property in the Event of Armed Conflict, which was accepted in final form by a meeting of governmental representatives at the Hague in May 1954 and has since been ratified by many of the member nations. The Committee is now working on a revision and modernization of the Final Act of the International Conference on Excavations (the so-called Cairo Agreement). The main purpose of the revision is to encourage archeological excavations by foreign scientists, particularly in nations where competent local men are not yet available, by simplification and liberalization of regulations, which in some countries are prohibitive or nearly so.

During 1953 and 1954 and on the request *of the countries concerned, the Committee has sent special missions to Syria, to conduct a survey of historical and archeological sites and to make general recommendations for the preservation and restoration of monuments; to Lebanon, to study the monuments in the town of Tripoli and to recommend general measures, taking into account their historical and artistic values and the needs of an expanding modern town, also to recommend specific immediate work, especially at the Acropolis of Baalbek; to Iraq, to advise the Government on the problems concerning the preservation of the monuments of Hatra; to Israel, to advise the Israeli authorities on the preparation of plans for the layout of the ancient towns and on the restoration of mosaics; and to Egypt, to draw up detailed plans for the organization of a center of documentation on the art of Ancient Egypt.

In addition to the foregoing, the Museums and Historic Monuments Division of UNESCO has aided archeologists by the publication of a magazine, *Museum*, and by the organization of International Seminars for Museum Staff and Educators, the last of which was held in Athens, September 12 to October 10, 1954. These seminars include sessions on archeology and ethnology. Finally UNESCO has been instrumental in the creation of various organizations, whose work is also important for archeology. The Commission Internationale pour une Histoire du Développement Scientifique et Culturel de l'Humanité, for example, has undertaken the task of writing a world history, the various sections of which (including prehistory) are being prepared by leading scholars from all parts of the world and are now being published in the *Journal of World History*. The International Council for Philosophy and Humanistic Studies, to give another instance, has assisted by subventions the publication of such works as the *Fasti Archaeologici* and the *Corpus Vasorum Antiquorum*.

With a few marked exceptions, there is nothing very striking to record in the development and use of archeological techniques in the Old World beyond the progress reported in the papers of the

Wenner-Gren Symposium of 1952, previously referred to. It is true, however, that during the past three years there has been an observable trend toward greater precision in dating, by the employment of every available method, ranging all the way from fluorine tests to glottochronology. The greatest progress in this direction has been of course along the line of carbon 14 dating. The preliminary demonstration of the value of this technique, which was first developed in America, has so impressed foreign archeologists that during the past few years radiocarbon laboratories have been established in Copenhagen, London, Groningen, Rome, and Warsaw, with the likelihood that these shortly will be followed by similar installations in France, Germany, and other countries.

As yet few actual runs of Old World material have been made, and these mostly in America, as the European laboratories only are just coming into operation. Such radiocarbon dates as are available tend on the whole to confirm archeologists' estimates that were based on other methods and evidence. A few glaring exceptions may be due to error or contamination, but there is always the possibility that some accepted chronological schemes may have to be considerably revised and those who are interested in Old World prehistory are eagerly awaiting the outcome of this new and independent check on dates derived from varve counts and pollen analysis as well as a further testing of the accuracy of the carbon 14 technique by applying it to many more cases of historically datable material than hitherto has been possible in America. Especially interesting results are expected when the method is used to bring order into the prehistoric chronology of some parts of Africa and Asia, where written history begins very late.

Refinements in archeological field methods have proceeded apace. Aerial reconnaissance and aerial photography are increasingly demonstrating their usefulness. To cite one instance, Malleret and Groslier in this way recently discovered the hitherto unknown site of the ancient city state of Funan, in Viet Nam. The successful results of underwater archeology, in the "excavation" of sunken Greco-Roman cargo ships by divers off the coast of Provence (Casson, 1953), as well as the investigation of the ancient harbor defenses at the site of Sidon in Lebanon (Poidebard and Lauffrey, 1951), have stimulated efforts elsewhere. It was reported in 1954 that a society for free underwater swimming has been formed in Cyprus and that some of the members have been fishing up old amphorae off Famagusta. Mention also should be made of the way in which Donald F. Brown discovered what is probably the site of the important and "lost" Greek colony of Sybaris in Southern Italy, first by deciding that it must be below recent alluvium and a modern higher water table and then by designing a series of borers and bringing up samples of soil and datable pottery fragments to confirm his opinion (Johnson, 1954c). Another example of ingenious field methods was in the case of a reconnaissance in 1953 by Thorkild Jacobsen of the Oriental Institute, in which, by mapping the location of ancient Sumerian sites in Southern Mesopotamia and dating the period of their last occupancy by the surface potsherds, he was able to determine the former course of the rivers and the main irrigation canals in the third millenium B. C. (Jacobsen, 1954).

SURVEY BY PERIODS

Interesting as these matters are, the most important things to report in a survey of this sort are the concrete additions to our knowledge of the past through excavation and research, particularly through excavation. It is obviously impossible to report everything in the space of a few pages, so the rest of this review will be devoted largely to an account of some of the more outstanding pieces of field work, which may serve as examples of the direction which archeological investigation has taken in the past few years. Furthermore, to give this account some coherence, it is proposed to divide it into three sections. The first will deal with certain fairly important work which throws new light on the various periods of prehistory and early history; the second will be in the nature of a survey of other work by areas and countries; and the last will consist of a brief review of the extent to which America has contributed to Old World archeology during the period in question. In this connection Oceania will be considered, as well as Europe, Africa, and Asia, largely because our foreign colleagues usually argue that technically it forms part of the New World, while American archeologists are apt to consider the New World to consist only of the two American continents, thus leaving Oceania, bat-like, to be omitted by both camps in any survey such as the present one.

Beginning with the Paleolithic period, the most dramatic recent addition to our knowledge is a negative one, namely the demonstration that the famous Piltdown skull cap and jawbone do not represent a very early hominid type, "Piltdown Man," but that they belong respectively to a relatively modern man and a contemporary ape and, what is more, that they are the result of a very clever and deliberate piece of forgery. The detective work, announced in 1953, was performed by Weiner, Oakley, and Clark, largely with aid of improved fluorine tests. "Piltdown Man" had long been a puzzle to physical anthropologists and an object of some suspicion, although no one suspected an actual hoax. Its elimination from consideration clears the way for a more satisfactory study of the evolution of the sapiens type (Weiner and others, 1953; Straus, 1954a).

Further important light on the Paleolithic period has resulted from three excavations in North Africa: at the site of Aïn Hanech in Algeria, Camille Arambourg (1953) found very primitive artifacts made on pebbles—choppers, chopping tools, and "boules"—in association with a Villafranchian-type fauna of the Lower Pleistocene, some of the earliest human implements yet discovered; at Ternifine (also known as Palikao), in Algeria, Arambourg unearthed flake tools, cleavers, and hand-axes of primitive Acheulean type, with a Middle Pleistocene fauna, and two fossil human mandibles, presented as a new genus, *Atlanthropus mauretanicus*, said to be related to Heidelberg Man, on the one hand, and Peking Man (*Sinanthropus*), on the other; at Haua Fteah, in Cyrenaica, Charles McBurney found a remarkably long stratigraphic sequence of Paleolithic cultural remains in a cave, the basal stratum of which (Levalloiso-Mousterian) produced a human mandible of Neanderthaloid type.

South Africa has been the scene of great activity, marked especially by further investigation and discussion of the *Australopithecinae*. These "poor relations" of man, with their erect posture, are generally considered to be hominid, in spite of their small brains and the fact that there is no clear evidence as yet that they knew the use of tools or fire (Cooke, 1952; Howells, 1954; Oakley, 1954; and Straus, 1954b). Recent finds at the Lusaka site, in Northern Rhodesia, may indicate that there were artifact-using hominids contemporary with the Australopithecines, who themselves were probably descendants of an early primitive human type rather than an original ancestral form. Other excavations help greatly to clarify the picture of man's development during the Pleistocene in this part of the African continent. In March 1953, C. Van Riet Lowe, P. Teilhard de Chardin, Kenneth P. Oakley and J. Desmond Clark found Kafuan pebble tools *in situ* in the surface limestone that forms a crust over the underlying highly cemented Basal Older Gravels. These are thus the oldest human artifacts with a sound geological documentation that have yet been discovered in South Africa and they lead to the conclusion that here, as in East and Central Africa, the beginning of the development of the Chelleo-Acheulean hand-axe complex must date from the Kamasian pluvial period (Lowe, 1953). At Kalambo Falls in Northern Rhodesia, Late Acheulean living floors were noted (Clark, 1953), while at the Hopefield site, "Saldanha Man" (closely related to "Rhodesian Man" but somewhat older) was located in association with an extinct fauna and a Late Stellenbosch industry, although the stratigraphy here does not fit the Vaal sequence (Goodwin, 1953).

In France, Dorothy Garrod dug a Magdalenian rock shelter near Angles-sur-l'Anglin (Vienne), which contained a splendid series of life-sized relief sculptures of horses, ibexes, and human figures (Garrod and de Mathurin, 1952). Farther south, at Les Eyzies, in the heart of the Dordogne country, Hallam L. Movius, Jr. of the Peabody Museum, Harvard University, dug test trenches at the rock shelter of Abri Pataud and found rich artifact-bearing strata of Perigordian 4 and 5 affinities overlying an Aurignacian horizon, with indications that further excavation and study would go far to unravel the complexities of the Aurignacian and Perigordian sequences of artifacts and date the various stages in terms of contemporary geological events (Movius, 1954).

Italy has not lagged behind in recent Paleolithic investigation. In 1953, A. C. Blanc discovered a cave at Doura, near Palermo (Blanc, 1953). On the walls were many finely executed engravings of animals and of men, with masks, engaged in ritual scenes. Near Toirano in Liguria, Blanc found another cave in which were footprints of a man, together with footprints and bones of a cave bear. As the cave bear has been found elsewhere in Italy in association with remains of Neanderthal Man, it is thought that the footprints here may be those of a Neanderthal (Blanc, 1952).

In Central Europe traces of Paleolithic culture in Serbia, together with rich faunal remains, were reported in 1952 from the cave of Jerinimo Brdo, while important new Paleolithic discoveries were later made in Czechoslovakia at the site of Dolni Vestonice (Klima, 1954).

Extensive additions to our knowledge of the Paleolithic period have been made in the Soviet Union. In 1954 the cranium of a Mousterian child was reported from the Starosel's cave in Crimea (Formozov, 1954). Much work has also been done in the Ukraine (Boriskovskii, 1953). In 1953 A. P. Okladnikov reported on twenty-nine Siberian Paleolithic sites in the Lena river valley, thus greatly extending the area of known human occupation during the period.

Elsewhere in Asia other important Paleolithic finds have been made. Ralph S. Solecki, of the Smithsonian Institution, in cooperation with the Directorate General of Antiquities of Iraq dug in Shanidar Cave, ten miles northwest of Rowanduz. He demonstrated that the site had been occupied almost continuously from Levalloiso-Mousterian times to the present and that it contained a new Upper Paleolithic industry. The value of this stratigraphy was enhanced by the find, at a depth of twenty-six feet, of the teeth, skull fragments, and parts of the arm and leg bones of a child, in a deposit containing stone implements of Mousterian age (Solecki, 1952, 1953a, 1953b). Far to the east, in West China, a fossilized human skull was reported from Tzeyang, in Szechwan province. This was found twenty-three feet underground in a gravel stratum of the late Quaternary period and constitutes the first remains of Paleolithic man yet known in Southwestern China (Borob'ev, 1953; Chia, 1954). Hope of similar discoveries in the Philippines was aroused by the work of G. H. R. von Koenigswald, immediately following the Fourth Far-Eastern Prehistory Congress at Manila late in 1953, when he reported the presence of Pleistocene mammal remains, thus definitely confirming the theory that the Philippine Islands were connected with the mainland at a time when Paleolithic man was known to be in Eastern Asia (Anonymous, 1953e).

All in all, this is an impressive showing for Paleolithic investigation during the years 1952 to 1954. Much less can be said for the following period, the Mesolithic. Probably the most important item within this time range is the very informative excavation of the Maglemosean site of Star Carr in Yorkshire, England, which was concluded by Grahame Clark in 1952. Worthy of mention also is the recent report of the French on the geology of Indo-China, which demonstrates that, as had long been suspected, the famous Hoabinhian sites in that area are mostly, if not wholly, post-Pleistocene in date (Saurin, 1953). Still more important was the discovery in Japan of several allegedly pre-ceramic sites, with chipped stone industries: the Iwajuku site in Gumma Prefecture, the Washuzan site in Okayama Prefecture, and several others. Further investigation of these sites should do much to increase our knowledge of the early prehistory of Japan.

When we come to problems of Neolithic culture, there is much more to record. One of the greatest of these problems is the question of where, when, and how men first discovered agriculture and made the momentous change from a food-collecting to a food-producing economy. Just before the beginning of the three years now under discussion, Robert J. Braidwood of the Oriental Institute, with the assistance of Bruce Howe and backed by the American Schools of Oriental Research, did much to close the gap between Mesolithic and Neolithic, in the Kurdistan foothills of Iraq, by excavation of the site of Jarmo, with preceramic lower levels, and the nearby site of Karim Shahir, which seems to be on the borderline between the two cultures. At the moment of writing (December, 1954) these two archeologists, with other colleagues, are once more in the field in Kurdistan, searching for evidence of the first farming communities. Meanwhile in Jordan, in the seasons of 1952 to 1954, Kathleen Kenyon, on a joint British-American expedition, greatly enlarged our knowledge of early Neolithic culture by her excavations at Jericho, where she unearthed the remains of a large, seven-thousand year old pre-ceramic Neolithic settlement, with town walls and many buildings. A singular find in this horizon was the earliest portrait sculpture yet known, in the shape of seven human skulls, with the features beautifully modelled in plaster and the eyes inlaid with shells (Kenyon and Tushingham, 1953; Anonymous, 1953b).

On the other hand recent work in Europe has pointed to the necessity of reducing somewhat the estimated dates of some of the Neolithic remains in the western part of that continent. It now seems that all the Megalithic structures in Spain and France must be assigned to the second millenium B. C., while the excavations of Salvatore Puglisi show that the painted pottery of the Apulian "Neolithic" is in part contemporary with the Mycenaean period of Greece and the eastern Mediterranean. In northern Russia also there is a similar tendency to reduce the dates of the so-called Neolithic culture of the forest zone (Gimbutas, 1953). Further east, in Siberia, the latest work of A. P. Okladnikov (1950) has put on a fairly firm foundation the chronological development of Neolithic culture in the Baikal-Angara region of Siberia and all the way down the Lena river to the Arctic Ocean.

The most striking event in Bronze Age archeology has been the decipherment of the Minoan Linear B script and the revolutionary discovery that not only the records in the script that were found at Pylos and Mycenae in the Peloponnesus but also those at Knossos in Crete were kept in an early form of the Greek language (Ventris, 1954; Johnson, 1954a; Dow, 1954). We owe this new knowledge to an English architect, Michael Ventris, who, in collaboration with John Chadwick, succeeded in showing that the Pylos tablets contained many Greek words, often in archaic forms, as well as the names of Greek divinities, such as Athena, Hera and Poseidon, and those of well-known places. Two conclusions are to be drawn from this discovery: first, that the Achaeans were evidently in Crete at an earlier date than was hitherto supposed, namely in the Late Minoan II period; and second, that the Linear B syllabary was not well adapted to represent Greek sounds and thus its predecessor (Linear A script), which contains many of the same characters, may have first been used for writing a non-Greek language and may now perhaps itself be deciphered with the help of phonetic values found for the characters of the Linear B.

Other important European excavations on post-Neolithic sites include the work of the American School of Classical Studies at Athens in the rich new site of Lerna, where remains of the largest Early Helladic building yet known have been revealed (Caskey, 1953, 1954; Johnson, 1954e), and other work by Bernabò Brea in the Lipari Islands, which has brought to light stratified remains dating from Neolithic and Mycenaean to historic Greek times. Mention also should be made of the excavation by Giorgio Buchner of what may be the earliest colonial Greek cemetery in the west, on the island of Ischia near Naples, and the investigation by Jotham Johnson of the walled forts of the Roman republican period in Latium which has led him to the conclusion that polygonal architecture is not a safe criterion for dating and that many of these towns are younger than was once supposed (Johnson, 1954b). Finally, at the Heuneberg in Germany the finding of black-figured vases in a Hallstatt context seems to demonstrate that the Late Hallstatt period of the Early Iron Age must have begun later than it has been the custom to estimate (Dehn and others, 1954).

In India great progress has been made in establishing the chronological framework of the prehistory of the major part of the sub-continent. Following the reported stratigraphy of several important sites in southern India, which were excavated in the years immediately preceding 1952 and which established a complete sequence of cultures from Mesolithic to Roman times, H. D. Sankalia has more recently performed the same task for part of the Deccan (Sankalia and others, 1953). Lastly, a government survey of sites in the Indus region and the excavation of Hastināpura in the Meerut district, near Delhi, has gone far to solve one of the most troublesome problems that have perplexed Indian archeologists, namely what was the culture of northwestern India during the fifteen hundred years or so that elapsed between the end of the Harappa culture and the beginning of the historic period about 500 B. C. (Lal, 1952).

SURVEY BY AREAS

As might be expected, the tempo of archeological activity has been increased somewhat during the past three years in most of the countries of the Old World. Up to this point in our survey we have selected for comment excavations which have a bearing on major problems of periods and dating. It is of course impossible to summarize here the remaining body of field work, most of it excellent, which in total adds so much to our detailed knowledge of Old World prehistory and early history. Yet this cannot be wholly ignored and so the next few pages will be devoted to a brief regional review.

Western Europe of course, as always, has been a particular center of activity and it is especially difficult to select individual excavations as more outstanding than others. In Great Britain much attention has been devoted to remains of the Roman period. Further progress was also reported at the site of Jarlshof, in the Shetland Islands, where important remains of the Picts and the Vikings were found, as well as earlier cultures (Hamilton, 1953). At Stonehenge, carvings apparently representing Mycenaean daggers were discovered on some of the large uprights. These and a carbon 14 date of 1848 B. C. ±275 years for Stonehenge, announced in 1952, does much to end speculation about the age of this monument (Piggott, 1951; Atkinson, 1953). In Ireland, the most noteworthy items to record are the excavation of a Late Neolithic settlement at Lough Gara and the long awaited beginning of work, by Séan Ó Ríordáin, at Tara, the famous seat of Irish kings. In Northern Ireland a Late Neolithic site was dug at Lyle's Hill in Antrim (Evans, E. E., 1953).

The Scandinavians and Germans continued their admirable work at many sites of various periods. In 1953 the French excavated a singularly rich Celtic chariot burial at Vix, on the Côte d'Or, and found there many Greek and Etruscan metal vases and other imported objects which were important for dating purposes. In a paper read at the Madrid Congress, E. Vogt advanced proof that the celebrated Swiss lake-dwellings were not actually built in the lakes but upon their shores.

Highlights in Spain were the discovery of two new Paleolithic caves, Las Monedas and Las Chimeneas (Carballo, 1953a, b), and continuation of work in the Iberian, Roman, and Paleo-Christian cemeteries of Ampurias and the Visigothic cemetery of Segovia (Molinero Perez, 1954). Italian efforts were largely concentrated on Roman remains at Pompeii (Anonymous, 1952a), Baiae (Anonymous, 1953c), and a newly discovered Roman villa near Piazza Armerina in Sicily. Of more general interest than archeological value was the report that in 1952 skeletons of some of Hannibal's elephants were found at Cannae, where the Carthaginian general defeated the Romans in 216 B. C. The puzzling chronology of the monuments on the island of Malta, their relative dating, and connections with the rest of the Mediterranean were clarified by John D. Evans (1954), in an article that appeared in the *Proceedings of the Prehistoric Society.*

In Greece, excavations were conducted at Argos by the French School, at Olympia by the German Institute, at Knossos by the British School, and at Phaistos by the Italian School. The most important finds were made at Mycenae, where Wace recovered some fine Mycenaean ivory carvings and thirty-nine tablets in the Linear B script and where an expedition of the Greek Archeological Society, assisted by George E. Mylonas, excavated a new circle of royal graves of Middle Helladic age containing very rich material. In Cyprus new work was begun or old work continued at Enkomi, Paphos, Pighardes, and Kourion.[1]

Egypt was much in the news in 1954, through the discovery, near Cheops' pyramid, of the funerary "solar ship" of that monarch, which for nearly five thousand years had lain undisturbed in a concealed limestone chamber (Bothmer, 1954). Other recent excavations in Egypt include that of a new royal tomb of the First Dynasty at Sakkara, believed to be that of King Uadji and dated at about 3100 B. C. This was the work of W. B. Emery (1953) for the Egyptian Exploration Society. Also at Sakkara another step pyramid of the Third Dynasty, similar to the famous one of Zoser, was discovered and partly cleared by Zakaria Goneim (Anonymous, 1952b); and there was continuation of work in the Dahsur pyramid area. At Tanqazi, near Meroe in the Sudan, Peter L. Shinnie excavated some large burial mounds, dating to about the fourth century A. D. and in Tripolitania, J. B. Ward-Perkins, of the British School in Rome, continued his work at the site of Sabratha, an ancient city once occupied by the Phoenicians, Romans, and Byzantines.

The Near East was a hotbed of archeological activity during the three years which we are now considering. In Israel excavations were conducted at Kebarah (Paleolithic), Yarmuk (Neolithic), Khirbet Kerak (largely Byzantine), Afula (Chalcolithic), Naan (Hyksos cemetery), and Caesarea (Greco-Roman). The search for more of the so-called "Dead Sea scrolls" in the Jordan area continued, resulting in the finding of about seventy manuscripts representing at least nineteen different books of the Bible, thought to date before the year 70 A. D., as well as valuable accounts of the sect of the Essenes. The manuscripts were written on papyrus and leather and were in the Hebrew, Aramaic, and Greek languages. Another group of recovered scrolls included two which were written in Hebrew characters on thin sheets of bronze, and also some fragments of the text of Euripides' *Andromache* (Anonymous, 1953b).

In Syria and Lebanon, work was continued at Mari (Parrot, 1953) and Ras Shamra (Schaeffer, 1954). At the latter site Claude F. A. Schaeffer discovered official archives of the city of Ugarit, including diplomatic correspondence with the Hittites in the second millenium B. C. Turkish archeologists also were excavating at Sultan Tepe, Old Smyrna, and Kara Tepe, while the Germans continued their investigation of the Hittite capital, Boghaz Keui, and Seton Lloyd dug at Beycesultan. The outstanding excavations in Iraq included the work of M. E. L. Mallowan at Nimrud (Mallowan, 1952a, b; 1953a, b) and that of the Iraq Directorate of Antiquities at the Parthian fortress-city of Hattra (Safar, 1952). Farther east, in Iran, the French Mission, under R. Ghirshman, uncovered more levels at Susa and cleared a thirteenth century B. C. ziggurat at the nearby site of Choga-Zambil (personal communication).

---

[1] Schaeffer, 1952a, b; Bryant, 1953; Mitford, 1952; Anonymous, 1953a; Taylor, 1952; and McFadden, 1954.

In Central Europe and the Balkans, there was much valuable excavation in Austria, including soundings in the Paleolithic cave, Salzoffenhöhle, in western Styria, and also in Yugoslavia. Archeological work in the satellite countries of Czechoslovakia, Poland, Hungary, Rumania, and Bulgaria, however, went forward at a much slower pace, in marked contrast to the situation in the Soviet Union itself.

The ambitious program of archeological field work in the Soviet Union, which began about thirty years ago as a matter of deliberate government policy, has been accelerated even more in the past few years. The number of separate expeditions at work at any one time is almost fantastic. Three recent developments are especially noteworthy. First, there has been a change in archeological theory; diffusion is recognized within reasonable limits; and the results of excavation are now seldom distorted to bring them into harmony with political ideology. Second, many of the blank spaces on the archeological map are now filled in—especially in Russian Turkestan and Siberia, where the most serious ones existed. Indeed for such sub-areas as Kirgizia and Tazhikistan, the middle Ob valley, the lower Ob valley, the Altai, the Yenisei valley, the Baikal-Angara region and the whole course of the Lena river, we have now such a series of excavated sites that it has been possible for the Russian archeologists to draw up chronological tables of named cultures for each of these sub-areas. The third development, which is a marked feature of the past few years, is the publication at last of comprehensive final reports of the more important excavations and surveys, instead of meager preliminary reports, which were all that were usually available until very recently. Excellent examples of these are: S. N. Bibikov's report (1953) on the Tripolye-culture site of Luka-Vrublevatskaia; S. P. Tolstov's account of the work of the Khorezm Expedition (Tolstov and Zhdanko, 1952; A. N. Bernshtam's report (1952) of the expedition to the Central Tian-Shan and Pamir-Alai; A. P. Okladnikov's reconstruction (1950) of the Neolithic and Bronze Age of the Baikal region; S. V. Kiselev's impressive work (1951) on the ancient history of Southern Siberia; and S. I. Rudenko's account (1953) of the culture of the Mountain Altai sites in Scythian times.

For Russian field work itself the greatest activity of late perhaps has been in the Tripolye area of the Ukraine, the East Ukraine, East Russia, and Russian Turkestan. Work on the classical sites of Crimea has been pushed with vigor. The cis-Ural region has been explored extensively, by archeological reconnaissance and excavation; the gap between the Chalcolithic and the Early Iron Age has been largely closed; and in Kazakhstan the investigation of pre-Andronovo sites has increased the knowledge of this important area, which provided a major route for culture movements from Eastern Asia to Eastern Europe and vice versa (Formozov, 1951). Special attention should also be called to years of excavation by S. P. Tolstov in the Khorezm region of the lower Oxus valley (Tolstov and Zhdanko, 1952). It is regrettable that the rest of the world remains so largely in ignorance of these results, through the reluctance of western scholars to learn Russian and through the refusal of Russian archeologists to publish summaries in other languages.

The Chinese archeologists have been very active during the new Communist regime. It is difficult to obtain detailed information of their work but, from such news as is available in popular publications and from Russian and Japanese sources and such occasional copies of Chinese scholarly journals as reach the west, it is evident that results of great importance are being obtained by the new Archeological Institute, of which Chêng Chên-tuo is president and Liang Ssu-yung (recently deceased) and Hsia Nai are vice-presidents. Work has been renewed at Chou-k'ou-tien and Anyang. An attack has been made on the problem of Neolithic culture in China. Excavations of prehistoric sites in Hui-hsien, Ch'êng-kao-hsien, and new work at Yang-shao—all in the province of Honan—as well as twelve localities in the Fêng river valley of Shansi, are stated to show that black pottery is found everywhere in the same levels as painted pottery, thus indicating that earlier views about two separate Neolithic cultures in the North China plain, the Yang-shao or Red Pottery culture and the Lung-shan or Black Pottery culture, may have to be seriously modified and that it will be difficult to maintain that the Yang-shao culture everywhere preceded the Lung-shan culture in time. A flood of new light on the high civilization that must have prevailed in Central and Southern China in the first millenium B. C. is cast by the excavation of tombs in the city of Ch'ang-sha, south of the Yangtze river in Hunan. Bronze weapons, lacquer, silk, and bamboo documents were recovered here, and it is now safe to assert that China had two distinct civilizations in pre-Han times, that of the south being essentially different from that of the north, but no less advanced. Royal tombs of the historic period were also dug, including two of the Nan-T'ang dynasty (tenth century A. D.) near Nanking and two of the Ming dynasty in a suburb of Peking.[2]

The most outstanding work of the Japanese archeologists during the period in question, other than that already referred to, was the Far-Eastern Archeological Society's investigation of the island of Iki in the Korean Strait, which, amplifying the results of the previous survey of Tsushima Island (recently published), provided new details of the Jomon and Yayoi cultures and the early relations between Japan and Korea (Mizuno *et al.*, 1953). In Korea itself work was brought to a standstill by the hostilities. The Seoul National Museum was badly damaged in the war and as yet has not been reopened. Fortunately, most of the collections were successfully removed and are still in Pusan. It should be added that archeological work has not been abandoned completely, for Jong Hak Kim, Keeper of the Namsan Branch of the National Museum of Korea, is now in America, at Harvard University, where he is writing the first authoritative account of Korean prehistory and protohistory.

In Formosa the National University of Taiwan has sponsored the digging of several prehistoric shell-mounds and at the site of Feng-pi-t'ou, in southern Formosa, discovered some painted pottery and black pottery, which may indicate early connections with the Chinese mainland.

AMERICA'S CONTRIBUTION

At this point is seems appropriate to consider the part that scholars and institutions of the United States have played in the recent development of the archeology of the Old World. This is a subject that has been much neglected and, because the efforts of Americans are generally supposed to be so heavily directed to the archeology of the Americas, it may come as a surprise to many to learn what an appreciable contribution has been made by archeologists here toward solving the problems of the other hemisphere.

If one were to call the roll of all the American universities whose departments of classics, departments of anthropology, and departments of fine arts have to a greater or less degree turned their attention to the archeology of parts of Europe, Africa, Asia, and Oceania, the list would be an impressive one. The same is true to some extent with the museums of this country, though, while a limited number of them are outstanding in this respect, it might be unfair to others to single them out by name. Lastly, there are certain societies and institutions which are specifically devoted to one or another aspect of Old World archeology, notably the Archaeological Institute of America, the American Schools of Oriental Research, the American School of Prehistoric Research, and the Oriental Institute of the University of Chicago, to name but a few. All these bodies have been active during the three-year period that we are currently considering.

In this connection the Wenner-Gren Foundation for Anthropological Research occupies a special position. While its efforts are not limited to any one branch of anthropology or to any one area of the world, it has played a great part in stimulating Old World archeological research. Mention has already been made of the International Symposium held under its auspices in 1952. Its many grants-in-aid for the support of field work overseas have been of inestimable value. In one case, in 1952 and 1953, the Foundation appointed an advisory committee of specialists to recommend a constructive program of research in the archeology of Africa south of the Sahara, with the result that financial aid was given to projects having a high priority and likely to yield the most important results. Also the Foundation's grants for publication have made available to scholars much needed information that might otherwise never have been printed.

---

[2] Sekino, 1951, 1953; Nai, 1952; Rubin, 1952; Its, 1952, 1953.

The *International Directory of Anthropological Institutions,* published by the Wenner-Gren Foundation in 1953, contains much valuable data about archeological institutions and archeologists abroad as well as in this country (Thomas and Pikelis, 1953). Two other publications that represent major American contributions to Old World archeology during the period in question are *Relative Chronologies in Old World Archeology* (Ehrich, 1954) and Nos. 5, 6 and 7 of the *Old World Bibliography,* compiled by Hallam L. Movius, Jr. and issued by the American School of Prehistoric Research (Movius, compiler, 1952 and 1953; Movius and Field, 1954). The former consists of papers originally presented at a Symposium at the Fifty-first Annual Meeting of the American Anthropological Association in Philadelphia on December 30, 1952, and published in 1954. The purpose of the Symposium (which was co-sponsored by the Archaeological Institute of America) was to arrive at some agreement on the chronological correlation of sites and levels of sites in Egypt, Palestine, Syria, Mesopotamia, Iran, southeastern Anatolia, the Aegean, southeastern and central Europe, and China, and thus to construct a framework of relative chronology for the prehistory and early history of those areas. The latter consists of a continuation of the series of very comprehensive biblographies of recent publications mainly in Old World Paleolithic archeology and paleoanthropology.

A new organization, the purpose of which is to advance the study in America of the archeology of Europe, Africa, Asia and Oceania, was created in 1953. This is the Council for Old World Archaeology, a non-profit corporation, the control of which is vested in representatives officially appointed by nine other American organizations: the Archaeological Institute of America, the American Anthropological Association, Section H (Anthropology) of the American Association for the Advancement of Science, the American Oriental Society, the American School of Prehistoric Research, the American Schools of Oriental Research, the Society for American Archaeology, the American Association of Physical Anthropologists, and the American Numismatic Society. It is the expressed hope of the Council to bring various groups of specialists into closer contact with one another by enabling them to share information of value to all. The immediate program of the Council is the publication of annual or biennial surveys of the more important archeological field work and research in every area of the Old World, with accompanying bibliographies, selected and annotated. This project has received wide support in America and also abroad, where the International Congress of Prehistoric and Protohistoric Sciences, at its Madrid meeting in April, 1954, passed a resolution endorsing the aims of the Council for Old World Archaeology and inviting the members of the Congress to cooperate. Thanks to a financial grant by the Wenner-Gren Foundation for Anthropological Research and some contributions by individuals, the Council is now in a position to organize its editorial staff, and it is expected that publication will begin sometime in 1955. The officers of the Council consist of Lauriston Ward, president; Noel Morss, clerk and treasurer; and ten other trustees, including the charter members designated by the nine organizations referred to above. Headquarters for the present are at 11 Divinity Avenue, Cambridge, Massachusetts.

The record of American excavation in the Old World during the last three or four years is a long and creditable one. With a few scattered exceptions the work has been concentrated in three regions: the classical lands of the Mediterranean, the Near East, and Indonesia and Oceania.

Principal roles in the Mediterranean area have been played by the Classical School of the American Academy in Rome and by the American School of Classical Studies in Athens. The major work of the former was at Cosa (modern Ansidonia), near Orbitello, on the coast of Tuscany. Here the excavations by L. Richardson, Jr., revealed much new information about the life of a Roman community in the days of the Republic (Van Buren, 1953, 1954). In Greece, Homer A. Thompson continued the important work of the American School in the Athenian Agora (Thompson, 1952, 1953). Striking discoveries were made by Carl W. Blegen at the Mycenaean site of Pylos (Blegen, 1952, 1953; Johnson, 1954d) and by J. L. Caskey at Lerna (already mentioned). Other American work was undertaken at Eleusis, Corinth, and on the island of Samothrace.

Elsewhere in Europe there was Hallam Movius' excavation at the Abri Pataud in Les Eyzies, France, already mentioned. For Africa, the expedition to Oued Akarit in Tunisia (Howe, 1952) by the American School of Prehistoric Research (in conjunction with the Direction des Antiquités de Tunisie) formed part of a program of field work by the School, extending over several years and ranging from Tangier to Algeria and Tunisia, with the purpose of providing a clearer picture of the succession of Paleolithic cultures in northwest Africa. Farther east, the American Research Center in Egypt continued its work of assisting American and foreign scholars in that country.

American archeologists were active also in the Near East. The expedition of the University Museum of the University of Pennsylvania, under Rodney Young, dug the great site of Gordion in Turkey, and the Oriental Institute (for part of the time in cooperation with the University Museum), under Donald McCown, conducted very rewarding excavations at Nippur in Iraq (McCown, 1952). Other field work of the University Museum was undertaken in 1954 by the expedition to Afghanistan, where Rodney Young dug at Balkh, Schuyler Cammann uncovered a Buddhist shrine, and Carleton S. Coon excavated a prehistoric rock shelter, Kara Kamar, on the northern slopes of the Hindu Kush. To this list should be added the work of Frank Albright at Mârib in southern Arabia (Albright, 1952), Nelson Glueck's dig at Ain Murifiq, a Chalcolithic site in Israel, as well as Solecki's excavation of Shanidar Cave in Iraq, and Braidwood's and Howe's continuing work in that same general region, to which previous reference has been made.

Still farther to the east, in the Pacific area, we have to record Wilhelm G. Solheim's excavation of the Batungan caves in the Philippines (Solheim, 1953), Edward W. Gifford's work in Fiji and New Caledonia, that of Douglas Osborne in Guam and Palau, of Alexander Spoehr in Saipan and Tinian, and of Kenneth P. Emory in Hawaii, all of which deserve more than this brief mention. At the moment of writing (December, 1954), plans are being matured for an ambitious Tri-institutional Program of Archeological Research in the Pacific Islands, sponsored by Yale University, the University of Hawaii, and the Bishop Museum.

In concluding this very condensed review of recent activities in Old World archeology, the author would like to point out once more that, in addition to any possible sins of commission, he has, due to limitations of space, inevitably laid himself open to almost infinite sins of omission. The task of preparing this summary has been much like that of a man who is asked to construct a full-scale model of the S. S. Queen Elizabeth and then try to get it into a bottle. Of course, if the operation is not altogether successful, one can always blame the bottle.

REFERENCES

ALBRIGHT, FRANK P.

1952 "The Excavation of the Temple of the Moon at Mârib (Yemen)," *American Schools of Oriental Research, Bulletin*, No. 128, December, pp. 25–38.

ANONYMOUS

1952a "A five-year Plan for Pompeii: an Ambitious Scheme of Excavation," *Illustrated London News*, Vol. 220, No. 5896, April 19, pp. 678–679.

1952b "The Discovery of a New Step Pyramid: A Third Dynasty Find at Sakkara," *Illustrated London News*, Vol. 220, No. 5903, June 7, pp. 980–981.

1953a "An Ivory Masterpiece and Treasures of Gold and Silver from the Cyprus of 3000 years ago. Remarkable Finds from a Bronze Age Cemetery near Old Paphos," *Illustrated London News*, Vol. 222, No. 5950, May 2, pp. 710–711.

1953b "Oldest Sculpture Portraits: Plaster-faced Human Skulls Dating Back to 5000 B. C. Are Found in the Rubble of Ancient Jericho," *Life*, May 11, pp. 119–121.

1953c "Excavations at Baiae. Uncovering the World's First Spa and Imperial Rome's Most Luxurious Holiday Resort," *Illustrated London News*, Vol. 223, No. 5968, Sept. 5, pp. 346–347.

1953d *Fourth Far-Eastern Prehistory Congress and Anthropology Division of the Eighth Pacific Science Congress: Abstracts and Messages*. Quezon City, Philippines: published by the Organizing Committee. 118 pp.

1953e *A Christmas Gift to Philippine Natural Science* (Special Post-Congress Bulletin No. 1 of the Fourth Far-Eastern Prehistory Congress). Mimeographed Statement by the National Research Council of the Philippines released for publication on December 21, 1953. 4 pp.

1953f "Another Find of Manuscripts in Palestine," *Antiquity*, No. 105, pp. 39–40.

1954 *Council for British Archaeology. Report No. 4 for the Year Ended 30 June, 1954*. London. 52 pp.

ARAMBOURG, CAMILLE

1953 "Nouvelles Observations sur le Gisement de l'Aïn-Hanech près de Saint-Arnaud (Constantine)," *Comptes Rendus du Academie des Sciences de Paris*, Vol. 236, No. 25, pp. 2419–2420.

ATKINSON, R. J. C.

1953 "The Date of Stonehenge," *Proceedings of the Prehistoric Society, for 1952*, Vol. XVIII, Part 2, pp. 236–237.

BERNSHTAM, A. N.

1952 *Istoriko-Arkheologicheskie Ocherki Tsentral'nogo Tian'-Shania i Pamiro-Alaia* (Akademiia Nauk SSSR, Institut Istorii Material'noi Kul'tury). Moscow-Leningrad: Izdatel'stvo Akademii Nauk SSSR. 346 pp.

BIBIKOV, S. N.

1953 *Rannetripol'skoe Poselenie Luka-Vrublevetskaia na Dnestre* (Materialy i Issledovaniia po Arkheologii SSSR, Institut Istorii Material'noi Kul'tury, No. 38). Moscow-Leningrad: Akademiia Nauk SSSR. 460 pp.

BLANC, A. C.

1952 "The Oldest Human Footprints? Newly Discovered and Perfectly Preserved Vestiges of Man—or Neanderthal Man—Which May Be At Least 70,000 Years Old," *Illustrated London News*, Vol. 220, No. 5889, March 1, pp. 377–379.

1953 "The Finest Palaeolithic Drawings of the Human Figure—Revealed by the Demolition of Artillery Shells in a Sicilian Cave. A Unique Initiation Rite," *Illustrated London News*, Vol. 223, No. 5963, August 1, pp. 187–189.

BLEGEN, CARL W.

1952 "The Palace of King Nestor," *Archaeology*, Vol. 5, No. 3, pp. 130–135.

1953 "King Nestor's Palace: New Discoveries," *Archaeology*, Vol. 6, No. 4, pp. 203–207.

BORISKOVSKII, P. I.

1953 *Paleolit Ukrainy* (Materialy i Issledovaniia po Arkheologii SSSR, Institut Istorii Material'noi Kul'tury, No. 40). Moscow-Leningrad: Akademiia Nauk SSSR.

BOROB'EV, M. V.

1953 "Nakhodka Iskopaemogo Cheloveka v Iuzhnom Kitae," *Sovetskaia Etnografiia*, No. 3, pp. 201–203.

Bothmer, Bernard V.

1954 "The Cheops Boat Grave," *American Research Center in Egypt, Newsletter,* No. 15, pp. 4–11.

Bryant, A.

1953 "New Light on Ancient Cyprus," *Illustrated London News,* Vol. 223, No. 5968, September 5, p. 342.

Carballo, Jesus

1953a *La Caverna de las Monedas y sus Interesantes Pinturas.* Santander:Patronato de las Cuevas Prehistoricas de la Provincia de Santander. 24 pp.

1953b "La Cuarta Caverna Pintada en el Monte-Castillo (Puente Viesgo) ," *Mineria y Metalurgia,* No. 150, pp. 13–15.

Caskey, John L.

1953 "An Early Settlement at the Spring of Lerna," *Archaeology,* Vol. 6, No. 2, pp. 99–102.

1954 "Lerna, 1953," *Archaeology,* Vol. 7, No. 1, pp. 28–30.

Casson, Lionel S.

1953 "Sea-digging," *Archaeology,* Vol. 6, No. 4, pp. 221–228.

Chia Lan-po

1954 "New Anthropological Discovery," *China Reconstructs,* Vol. III, No. 4, p. 36.

Clark, J. D.

1953 "New Light on Early Man in Africa," *Antiquity,* Vol. XXVII, No. 108, pp. 242–243.

Cooke, H. B. S.

1952 "Mammals, Ape-men and Stone-age Men in Southern Africa," *South African Archaeological Bulletin,* Vol. VII, pp. 59–69.

Dehn, Wolfgang; Sangmeister, Edward; and Kimmig, Wolfgang

1954 "Die Heuneberg beim Talhof: Vorläufige Ergebnisse der Grabungen 1950–1953," *Germania,* Jahrgang 32, Heft 1–2, pp. 22–59.

Dow, Sterling

1954 "Minoan Writing," *American Journal of Archaeology,* Vol. 58, No. 2, pp. 77–129.

Ehrich, Robert W. (ed.)

1954 *Relative Chronologies in Old World Archeology.* Chicago: The University of Chicago Press. 154 pp.

Emery, W. B.

1953 "An Egyptian Royal Tomb 1500 Years Before Tutankhamun. A Major Discovery in the Archaic Cemetery of North Sakkara," *Illustrated London News,* Vol. 222, No. 5953, May 23, pp. 839–843.

Evans, E. Estyn

1953 *Lyles Hill: A Late Neolithic Site in County Antrim.* Belfast: Her Majesty's Stationery Office. 71 pp.

Evans, John D.

1954 "The Prehistoric Culture-sequence in the Maltese Archipelago," *Proceedings of the Prehistoric Society for 1953,* Vol. XIX, Part 1, pp. 41–94.

Formozov, A. A.

1951 "K Voprosu o Proiskhozhdenii Andronovskoi Kul'tury," *Kratkie Soobshcheniia o Dokladakh i Polevykh Issledovaniiakh Instituta Istorii Material'noi Kul'tury* (Akademiia Nauk SSSR), No. 39, pp. 3–18.

Formozov, A. A.; Gerasimov, M. M.; and Roginskii, Ia. Ia.

1954 "Novaia Nakhodka Must'erskogo Cheloveka v SSSR," *Sovetskaia Etnografiia,* 1954, No. 1, pp. 11–41.

Garrod, Dorothy and St. Mathurin, Suzanne de

1952 "The Master Sculptors of 12,000 Years Ago Revealed: An Astounding Series of Life-size Human Figures, an Ibex Group and Horses Carved with Brilliant Naturalism by Magdalenian Man," *Illustrated London News,* Vol. 220, No. 5891, March 15, pp. 454–457.

Gimbutas, Marija

1953 "The Earliest Culture History of the Northern Part of the European U.S.S.R.: A Review Article," *Proceedings of the Prehistoric Society for 1953,* Part 1, pp. 108–115.

Goodwin, A. J. H.

1953 "Hopefield: The Site and the Man," *South African Archaeological Bulletin*, Vol. VIII, No. 30, pp. 41–46.

Hamilton, J. R. C.

1953 "An Iron Age Settlement in the Shetlands," *Archaeology*, Vol. 6, No. 2, pp. 104–107.

Howe, Bruce

1952 "Excavations in the Stone Age of Algeria and Tunisia," *Archaeology*, Vol. 5, No. 2, pp. 86–93.

Howell, F. Clark

1954 "Hominids, Pebble Tools and the African Villafranchian," *American Anthropologist*, Vol. 56, No. 3, pp. 378–386.

Its, R.

1952 "Noveishie Arkheologicheskie Raskopki v Kitaiskoi Narodnoi Respublike," *Vestnik Drevnei Istorii*, No. 41 (1952, No. 3), pp. 156–164.

1953 "Arkheologicheskie Issledovaniia v Chzhoukoudiane," *Sovetskaia Etnografiia*, No. 4, pp. 109–112.

Jacobsen, Thorkild

1954 "Mesopotamian Mound Survey," *Archaeology*, Vol. 7, No. 1, pp. 53–54.

Johnson, Jotham

1954a "The Language of Homer's Heroes," *Scientific American*, Vol. 190, No. 5, pp. 70–75.

1954b "The Hill Forts of Latium," *American Journal of Archaeology*, Vol. 58, No. 2, pp. 146–147.

1954c "Search for Sybaris," *Archaeological Newsletter*, No. 20, pp. 154–155.

1954d "Pylos, 1954," *Archaeological Newsletter*, No. 21, p. 162.

1954e "Lerna, 1954," *Archaeological Newsletter*, No. 21, pp. 162–163.

Kenyon, Kathleen M. and Tushingham, A. Douglas

1953 "Jericho Gives Up Its Secrets," *National Geographic Magazine*, Vol. 104, No. 6, pp. 853–870.

Kiselev, S. V.

1951 *Drevniaia Istoriia Iuzhnoi Sibiri* (Akademiia Nauk SSSR, Institut Istorii Material'noi Kul'tury). Moscow: Izdatel'stvo Akademii Nauk SSSR. 642 pp.

Klima, Bohuslav

1954 "Palaeolithic Huts at Dolni Vĕstonice," *Antiquity*, No. 109, pp. 4–14.

Kroeber, A. L. and others

1953 *Anthropology Today: An Encyclopedic Inventory* (The Inventory Papers, International Symposium on Anthropology, Wenner-Gren Foundation for Anthropological Research, Incorporated). Chicago: The University of Chicago Press. 966 pp.

Lal, B. B.

1952 "New Light on the 'Dark Age' of Indian History: Recent Excavations at the Hastināpura Site, Near Delhi," *Illustrated London News*, Vol. 221, No. 5920, October 4, pp. 551–553.

Leakey, L. S. B., (ed.)

1952 *Proceedings of the First Pan-African Congress on Prehistory, Nairobi (January 1947)*. Oxford: Basil Blackwell. 239 pp.

Lowe, C. van Riet

1953 "The Kafuan Culture in South Africa," *South African Archaeological Bulletin*, Vol. VIII, No. 30, pp. 27–31.

Mallowan, M. E. L.

1952a "Ivories of Unsurpassed Magnificence—the Finest and Largest from the Ancient Near East—Discovered in This Season's Excavations at Nimrud," *Illustrated London News*, Vol. 221, No. 5913, August 16, pp. 254–256.

1952b "The Great Frieze of Assur-Nasir-Pal and Other Important Discoveries at Nimrud," *Illustrated London News*, Vol. 221, No. 5914, August 23, pp. 294–296.

1953a "A Newly-found Assyrian Royal Palace of 2750 Years Ago: 'Guardian Angels' and Palace Frescoes, in Recent Discoveries at Nimrud," *Illustrated London News*, Vol. 223, No. 5965, August 15, pp. 254–257.

1953b "Treasures and Palaces of the Assyrian Kings: Ivories and Works of Art Newly Discovered in the Nimrud Excavations," *Illustrated London News,* Vol. 223, No. 5966, August 22, pp. 296–299.

McCown, Donald E.

1952 "Recent Finds at Nippur, a Great City of Ancient Mesopotamia," *Archaeology*. Vol. 5, No. 2, pp. 70–75.

McFadden, George H.

1954 "A Late Cypriote III Tomb from Kourion Kaloriziki No. 40," *American Journal of Archaeology,* Vol. 58, No. 2, pp. 131–142.

Mitford, T. B.

1952 "Excavating the Ancient Capital of Cyprus: Through the Four Thousand Years of the Civilization of Old Paphos," *Illustrated London News*, Vol. 220, No. 5899, May 10, pp. 802–803.

Mizuno, S.; Higuchi, T.; and Okazaki, T.

1953 *Tsushima, an Archaeological Survey of the Tsushima Island in the Korea Strait, Carried Out in 1948*. Tokyo and Kyoto: Tôa-Kôko-Gaku-Kwai (The Far-Eastern Archaeological Society). Japanese text 180 pp., with English résumé 38 pp.

Molinero Perez, Antonio

1954 *De la Segovia Arqueológica*. Segovia, Spain: Comisario Provincial de Excavaciones Arqueológicas de Segovia y Avila. 15 pp.

Movius, Hallam L., Jr.

1954 "Les Eyzies: a Test Excavation," *Archaeology*, Vol. 7, No. 2, pp. 82–90.

Movius, Hallam L., Jr., (compiler)

1952 *American School of Prehistoric Research, Old World Bibliography* (Recent Publications Mainly in Old World Palaeolithic Archaeology and Palaeo-anthropology), No. 5, April. Cambridge, Mass. 74 pp. (mimeo.)

1953 *American School of Prehistoric Research, Old World Bibliography* (Recent Publications Mainly in Old World Palaeolithic Archaeology and Palaeo-anthropology), No. 6, April. Cambridge, Mass. 79 pp. (mimeo.)

Movius, Hallam L., Jr. and Field, Rosamond, R., (compilers)

1954 *American School of Prehistoric Research, Old World Bibliography* (Recent Publications Mainly in Palaeolithic Archaeology and Palaeo-anthropology), No. 7, April. Cambridge, Mass. 86 pp. (mimeo.)

Movius, Hallam L., Jr. and Jordan, Douglas F.

1954 *A Bibliography of Early Man, Pleistocene Studies and Palaeolithic Archaeology in Southern, Equatorial, and Eastern Africa*. New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 126 pp.

Nai Hsia

1952 "New Archaeological Discoveries," *China Reconstructs*, July–August, 1952, pp. 13–18.

Oakley, K. P.

1954 "Dating of the Australopithecinae in Africa," *American Journal of Physical Anthropology*, n.s., Vol. 12, No. 1, pp. 9–27.

Okladnikov, A. P.

1950 *Neolit i Bronzovyi Vek Pribaikal'ia* (Materialy i Issledovaniia po Arkheologii SSSR, Institut Istorii Material'noi Kul'tury, No. 18). Moscow-Leningrad: Akademiia Nauk SSSR. 412 pp.

1953 "Sledy Paleolita v Doline r. Leny," *Materialy i Issledovaniia po Arkheologii SSSR,* No. 39, pp. 227–265.

Parrot, A.

1953 "New Statues of Astounding Perfection from Mari: A New and Unknown King and a 'Mesopotamian Melba' of 4500 Years Ago," *Illustrated London News,* Vol. 223, No. 5976, October 31, pp. 706–708.

Piggott, Stuart

1951 "Stonehenge Revisited," pp. 274–292 in W. F. Grimes (ed.), *Aspects of Archaeology in Britain and Beyond* (Essays presented to O. G. S. Crawford). London: H. W. Edwards. 386 pp.

Poidebard, A. and Lauffrey, J.

1951 *Sidon. Aménagements Antiques du Port de Saida. Etude aérienne, au Sol et Sous-marine, 1946–1950.* Beyrouth: République Libanaise, Ministère des Travaux Publics. 95 pp.

Rudenko, S. I.

1953 *Kul'tura Naseleniia Gornogo Altaia v Skifskoe Vremia* (Akademiia Nauk SSSR, Institut Istorii Material'noi Kul'tury). Moscow-Leningrad: Izdatel'stvo Akademii Nauk SSSR. 402 pp.

Rubin, V. A.

1952 "Arkheologicheskie Raskopki v Kitae," *Vestnik Drevnei Istorii*, No. 42 (1952, No. 4), pp. 152–158.

Safar, Fuad

1952 "Hatra and the First Season of Excavations," *Sumer*, Vol. VIII, No. 1, pp. 3–16.

Sankalia, H. D.; Subbarao, B.; and Deo, S. B.

1953 "The Archaeological Sequence of Central India," *Southwestern Journal of Anthropology*, Vol. 9, No. 4, pp. 343–356.

Saurin, E.

1953 "La Géologie du Quaternaire et les Industries Préhistoriques en Indochine," pp. 39–41 in *Fourth Far-Eastern Prehistory Congress and Anthropology Division of the Eighth Pacific Science Congress: Abstracts and Messages*. Quezon City, Philippines. 118 pp.

Schaeffer, C. F. A.

1952a "Where a Silver-and-Gold Masterpiece of 3000 Years Ago Was Found: Excavations in Enkomi-Alasia, the 14th Century B. C. Capital of Cyprus," *Illustrated London News*, Vol. 220, No. 5901, May 24, pp. 885–887.

1952b "The End of a Civilization of Three Thousand Years Ago: Achaean and Sea People Cultures Revealed at Alasia, the Ancient Capital of Cyprus," *Illustrated London News*, Vol. 220, No. 5902, May 31, pp. 936–938.

1954 "More Tablets from Syria and Cyprus," *Antiquity*, Vol. XXVIII, No. 109, pp. 38–39.

Sekino, Takeshi

1951 "Recent Excavations at the Choukoutien and Yin Sites," *Minzokugaku-Kenkyu*, Vol. 16, No. 1, pp. 49–54. (Japanese text, with English summary).

1953 "Recent Archaeological Investigation in China," *Archaeology*, Vol. 6, No. 1, pp. 49–52.

Solecki, R. S.

1952 "A Paleolithic Site in the Zagros Mountains of Northern Iraq. Report on a Sounding at Shanidar Cave (Part I)," *Sumer*, Vol. VIII, No. 2, pp. 127–192.

1953a "A Paleolithic Site in the Zagros Mountains of Northern Iraq. Report on a Sounding at Shanidar Cave (Part II)," *Sumer*, Vol. IX, No. 1, pp. 60–105.

1953b "The Shanidar Cave Sounding, 1953 Season, with Notes Concerning the Discovery of the First Paleolithic Skeleton in Iraq," *Sumer*, Vol. IX, No. 2, pp. 229–232.

Solheim, Wilhelm G., II

1953 "The Batungan Cave Sites in Masbate, Philippines," pp. 58–59 in *Fourth Far-Eastern Prehistory Congress and Anthropological Division of the Eighth Pacific Science Congress: Abstracts and Messages*. Quezon City, Philippines. 118 pp.

Straus, William L., Jr.

1954a "The Great Piltdown Hoax," *Science*, Vol. 119, No. 3087, pp. 265–269.

1954b "Fire and the Australopithecines," *Science*, Vol. 120, No. 3113, pp. 356–357.

Taylor, J. du Plat

1952 "The Late Bronze Age in Cyprus: A Recently Discovered Sanctuary Whose Site was Occupied for Half a Millenium," *Illustrated London News*, Vol. 220, No. 5892, March 22, pp. 494–495.

Tax, Sol; Eiseley, Loren C.; Rouse, Irving; and Voegelin, Carl F. (eds.)

1953 *An Appraisal of Anthropology Today* (International Symposium on Anthropology, Wenner-Gren Foundation for Anthropological Research, Incorporated). Chicago: The University of Chicago Press. 395 pp.

Thomas, William L., Jr. and Pikelis, Anna M. (eds.)

1953 *International Directory of Anthropological Institutions*. New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 468 pp.

THOMPSON, HOMER A.
1952 "The Athenian Agora, 1952," *Archaeology*, Vol. 5, No. 3, pp. 145–150.
1953 "The Athenian Agora, Excavation and Reconstruction," *Archaeology*, Vol. 6, No. 3, pp. 142–146.
1954 In "Archaeological News," *Archaeology*, Vol. 7, No. 4, pp. 249–250.

TOLSTOV, S. P. and ZHDANKO, T. A. (eds.)
1952 *Arkheologicheskie i Etnograficheskie Raboty Khorezmskoi Ekspeditii, 1945–1948* (Akademiia Nauk SSSR, Institut Istorii Material'noi Kul'tury). Moscow: Izdatel'stvo Akademii Nauk SSSR. 652 pp.

VAN BUREN, A. W.
1953 "News Letter from Rome," *American Journal of Archaeology*, Vol. 57, No. 3, pp. 215–216.
1954 "News Letter from Rome," *American Journal of Archaeology*, Vol. 58, No. 4, pp. 328–329.

VENTRIS, MICHAEL
1954 "King Nestor's Four-handled Cups: Greek Inventories in the Minoan Script," *Archaeology*, Vol. 7, No. 1, pp. 15–21.

WEINER, J. S.; OAKLEY, K. P.; and CLARK, W. E. LE GROS
1953 "The Solution of the Piltdown Problem," *British Museum (Natural History), London, Bulletin*, Vol. 2, No. 3, pp. 141–146.

New World Culture History

GORDON F. EKHOLM

Dr. Ekholm is Associate Curator of Archaeology at the American Museum of Natural History, New York, and also Lecturer in Anthropology at Columbia University. He was President, 1953-1954, of the Society for American Archaeology. His special field of interest and research has been Mexico, with principal publications including: Excavations at Guasave, Sinaloa, Mexico, 1942; Excavations at Tampico and Panuco in the Huasteca, Mexico, 1944; and "A Possible Focus of Asiatic Influence in the Late Classic Cultures of Mesoamerica," 1953.

THE primary purpose of this brief essay is to supply a guide to the recent literature dealing with New World culture history. It is intended to be of assistance to those who wish to look into any one aspect of this extensive field and to enable them to go directly to those writings which are most recent and most pertinent to their special interests. We shall also comment variously on current research activities and interests, but the field to be covered is so immense and diverse that our comments can only be suggestive of what is happening and can explore no one aspect in any detail.

The attached bibliography is considered the most important part of our effort. It is limited to those works published within the years 1952–1954, except in some cases where an earlier work continues to be the best coverage of a particular subject. The list is selective, including only those items which in our opinion are (1) in the nature of syntheses of materials on an area or a subject, (2) illustrate new trends in research or thought, or (3) are somewhat sizeable contributions of new data. Furthermore, the time available has not permitted a full search of all the current literature and the omission of important titles undoubtedly will be discovered.

By New World culture history we mean, of course, the history of the American Indian cultures throughout the period extending from man's first entry into the Western Hemisphere up to when the native cultures were disrupted by the European invasion that began in the 15th century. The primary method of investigating this cultural history is by archeology with which we shall be concerned primarily. The limited written information on pre-Conquest history that exists for certain areas of course is of great value, as are the early records concerning the nature and distribution of native cultures at contact times. Ethnographic and other kinds of anthropological studies are of varying value as concerns cultural history, many of them being directed toward purely anthropological ends. These latter largely will be excluded from consideration here as will the more specialized subjects of physical anthropology and linguistics.

So largely dependent on archeology as it is, the investigation of New World culture history has been a slow process. Only for a portion of Maya history do we have recorded dates equal to those which for all of the high civilizations of the Old World have afforded time scales on which to build. This lack has forced much of the effort of the American archeologist to be directed toward supplying the chronological framework which must be available to a certain extent before other more interpretative analyses can be made. We have been going through a long period of fact-gathering and of devising techniques for the ordering of cultures in their proper time and space relationships. There seemingly has been an inordinate concentration on the detailed study of potsherds, as well as an unusual specialization by most workers on local areas and local problems.

Within the last few years, though, there is apparent a rapidly growing interest in the broader synthesis of archeological data into more intelligible wholes. This reflects a trend present in culture-historical studies generally, perhaps, but it also stems from the fact that enough is now known about many portions of the New World to make it feasible. It is all to the good, of course, because it is only through such attempts to view our field in broad perspective that significant problems can be identified and research can be directed along the most profitable lines.

This growing interest in synthesis has not resulted yet in our being able to formulate, even in speculative terms, the gross outline of the entire subject of New World culture history with any degree of reliability. Summaries of certain major areas are appearing, however, that give us a considerable perspective and will eventually result in something like a consistent picture of man's cultural history in the Americas.

In commenting on the present status of culture-historical research in the New World, we will divide the subject into the three major areas of North America, Mesoamerica, and South America in the usual manner. First, however, we will refer to matters that concern the New World as a whole.

GENERAL CONSIDERATIONS

Bibliographic and informational sources that concern any one of our major New World areas will be mentioned later, but there are some of broader scope we must note here. The volumes of the *Programa de Historia de America* series (Comas, coordinator, 1953–1954), now in process of publication, are not all of equal utility, perhaps, but they contain extensive and organized bibliographies and extremely valuable summaries for some areas (see also Comas, 1953). The annual *Handbook of Latin American Studies* is a valuable compendium of information and bibliography in several fields, although its usefulness is somewhat impaired by its delay in publication. The volume just published (Aguilera, 1954) covers the year 1951. For current news of field activities, publication lists, and reviews, the generally most useful publications are: *Boletin Bibliografico de Antropologia Americano*, *American Antiquity*, and *Journal de la Société des Americanistes.*

The subject of early man and the origin of the American Indian could be treated separately for the entire New World, but we have chosen to include comments on it in the areal sections. The only recent publications treating of early man in the New World as a whole are by Sellards (1952) and Martinez del Rio (1953b).

Another area of interest that applies to the entire New World, rather than just one of our areas, is that of the relationship of the American Indian cultures to those of the Old World. There are many ramifications of this subject that we cannot enter into here, but we must note the considerable increase in interest in such problems in recent years—part of the trend, perhaps, toward broad interpretations. A number of workers in North American archeology have begun looking toward Asia for the origins of certain basic elements in their area, and distribution studies involving both continents have been made (Daifuku, 1952; Tolstoy, 1953). Others have been searching anew for significant similarities between America and Asiatic art forms,[1] while the distribution of cultivated plant species as evidence of trans-Pacific contacts has been discussed widely (Carter, 1953; Sauer, 1952). Heyerdahl's theories of major cultural transfers from the Americas to Polynesia have been found generally unacceptable to most students, but they have stimulated interest in the possibilities of Pacific crossings (Heyerdahl, 1952).

The tendency in the past to compartmentalize American archeological studies into areas has resulted in leaving untouched many important problems concerning the interrelationships of one area to another.

[1] Ekholm, 1953; Covarrubias, 1954; Heine-Geldern, 1954; Rands, 1953.

Of most interest is the question of relationships between the two nuclear American areas of the Andes and Mesoamerica, which has been touched upon recently (d'Harcourt, 1953; Porter, 1953), but is worthy of much more attention. Some attempt has been made to explore the varying processes of diffusion that apply to our interpretations of New World culture history (Willey, 1953c), and it is our belief that further discussions of this topic would be extremely helpful.

The dating of ancient materials by the radioactive carbon 14 method (Libby, 1952b) is playing an extremely important role in American archeology. From time to time new dates are announced (Libby, 1952a, 1954a,b) and analyses of their significance are made (Wauchope, 1954). The method appears to be generally reliable and promises an accurate time scale that will solve the greatest handicap there has been to establishing a real history of the New World cultures.

NORTH AMERICA

The number of institutions and individuals actively engaged in archeological research in the United States and Canada is very great and we could not begin to cover all aspects of work in the area. Excellent summaries exist for portions of North America, but few have attempted the overall synthesis of the masses of data that are available and are continually being augmented. Krieger's summary (1953) is the most recent and comprehensive.

The relation of the earliest cultures to climatological and geological phenomena of the Pleistocene—post-Pleistocene period is discussed for the entire North American area by Hurt (1953) and by Quimby (1954). Other works applying to all of North America are Swanton's encyclopedic treatment (1952) of all of the Indian tribes as they are known historically and ethnographically, and Murdock's comprehensive ethnographic bibliography (1953). A survey of North American Indian art forms by Covarrubias (1954) is also very worthy of note.

Arctic Area

The peoples of the American Arctic, the Eskimo and their Athapaskan and Algonquin neighbors, have been of particular interest to anthropologists because of their cultural adaptation to one of the most extreme climates encountered anywhere in the world. The western portion of the area they occupy is also a critical one as concerns the inhabiting of the New World from Asia.

Collins (1954) recently has summarized in considerable detail the present status of archeological and ethnographic research in this area. One of the most important recent developments in the archeological picture has been the identification at a number of widely separated sites of a stone complex of lameller flakes and polyhedral cores[2] seemingly related to the Mesolithic industries of the Old World. It is suggested that this flake blade industry goes into the making of the Dorset culture of Greenland and surrounding areas.

A noteworthy contribution is Giddings' archeologic and ethnographic study (1952) of the cultures of the Kobuk River region of Alaska.

Eastern United States and Canada

Systematic and cooperative effort by many archeologists has brought our knowledge of the Indian history of this area from a state of confusion and speculation to one of considerable refinement in a relatively short time. Quantities of data are available from many surveys and excavations and provide a basic framework for the history of the cultures of this area which is reasonably clear and reliable.

The most important attempt at an overall synthesis, and what will be the prime guide to the area for some years to come, is *Archeology of Eastern United States* (Griffin, ed., 1952). We can only refer the interested reader to this volume—especially for the summary article by Griffin in which he outlines the major developments in the area according to the generally accepted scheme of culture periods. The earliest of these, the Paleo-Indian, is just beginning to be defined, while the second, the Archaic, is the now relatively well-known stage preceding the appearance of pottery. Following those are the Woodland and Mississippi periods, divided further into various substages. The book includes an extensive bibliography and a comprehensive series of illustrations of artifacts.[3]

---

[2] Laughlin and Marsh, 1954; Meldgaard, 1952; MacNeish, 1954b; Knuth, 1954.

Clear evidence of cultures of the Paleo-Indian horizon is just beginning to appear in the eastern United States. This includes several sites containing fluted points along with other artifacts more or less comparable in content and in age with the Folsom horizon of the west (Byers, 1954; Ritchie, 1953; Witthoft, 1952).

Western United States and Canada

This region is usually thought of in terms of several separate geographic and cultural areas, but considering the few comments we have to make on some portions, we will not list these under separate headings.

The area is notable, of course, for the many finds representing the earliest cultures of the New World that it has produced. A recent find of a mammoth, with associated artifacts, has been reported by Haury, Antevs, and Lance (1953), and the excavations at Danger Cave in Utah, where a long period of occupation chronicled by rich remains in stratified deposits is discussed in a preliminary report by Jennings (1953).

Due to government sponsorship of a salvage program directed toward the study of archeological sites to be flooded by dam construction, there has been an unusual amount of archeological activity in the Plains area during the last eight years. A recent withdrawal of funds, however, will cause an irretrievable loss of sites in many areas. Much of the material gathered as yet has not been published, but recent papers (Roberts, dir., 1953), and those appearing previously give promise of a fairly detailed picture of many phases of the history of the area. The ethnology of the plains has been summarized in very usable form by Lowie (1954).

The so-called American Southwest continues to receive a great deal of attention by those anthropologists occupied with theoretical problems as well as those interested primarily in history. Actually these two interests blend and complement one another in many ways, as is evident in the recent "Southwest Issue" of the *American Anthropologist* (Haury, ed., 1954) where papers representing the various approaches to the study of the Southwestern peoples are gathered together. Of special interest to culture historians, however, is an article by Kirchhoff on the classification of the cultures of the "Greater Southwest,"—expanding the concept of the Southwest to a much larger area than that usually meant by the term, and for which he suggests the name of "Arid North America." In other papers in the volume, Taylor succinctly reviews the history and theory of Southwestern archeology, and Wheat discusses the interrelationships of the different cultural types existent in the Southwest and the question of whether or not the concept of the area co-tradition as defined by Bennett is applicable there. This issue of the *Anthropologist* provides the best recent summary of the status of Southwestern studies. It also reveals very clearly that the trend toward thinking in terms of whole areas and broader problems is well advanced among those concerned with this field.

The importance of the Southwest as a research area is further attested by the number of archeological studies resulting from recent and older field operations that have appeared during the period under review.[4]

For the Far West we can only note that

---

[3] There are further, more recent publications on the Southeast (Goggin, 1952; Ford, 1952; Sears, 1953; Solecki, 1953; Webb, 1952), on the midwest portion of the area (Deuel (ed.), 1952), and on the northeast section (Ritchie, 1952, 1954; Ritchie, Lenig, and Miller, 1953; MacNeish, 1952).

[4] Martin, Rinaldo, and Bluhm, 1954; Martin *et al.*, 1952; Morris and Burgh, 1954; Morss, 1954; Smith, Watson, 1952; Stubbs and Stallings, 1953; Wendorf, 1953, 1954; Wendorf (ed.), 1953; Woodbury, 1954.

the systematic surveys that have characterized the work of the California archeologists for a number of years have been continued, and important publications have appeared.[5] In the Northwest, including British Columbia, various archeological and ethnological projects are under way, but we have come across no major recent publications.

MESOAMERICA

Caso's recent brief summary of Mesoamerican culture history (1953b) probably still is acceptable to most students in the field, although the number and terminology of culture horizons would be subject to dispute. The concept of Mesoamerica as a culture area with a time depth of at least 1500 years has been well established by use, although as there should be, there has been no attempt to define it in any detail. There is an obvious over-all unity to the area but there are, nevertheless, two major sub-divisions within it, the Mayan and Mexican areas, and each has its own complex problems and its group of specialists who usually do not concern themselves with the whole of Mesoamerica.

Early Man

The combined archeological and geological research essential to advances in this field nowhere in Latin America have received the attention given them in North America. Promise of greatly increased activity in Mexico, however, came with the founding in 1952 of a separate Dirección de Prehistoria in the Instituto Nacional de Antropologia e Historia directed by Pablo Martinez del Rio. One of the first activities of this group was the excavation of a mammoth skeleton, with stone artifacts in association, at Santa Izabel Iztapan (Aveleyra Arroyo de Anda and Maldonado-Koerdell, 1952, 1953), and very recently another similar discovery was made near the well-known Tepexpan Man site. These well-documented finds definitely establish the association of man with large mammals in the Valley of Mexico and accent the importance of this locale for the study of early man.

Another activity of the Dirección de Prehistoria, but not precisely in the field of early man, has been the excavation of several caves in the State of Coahuila in northern Mexico, where a remarkably full inventory of otherwise perishable artifacts belonging to a nomadic, non-pottery-making people was found (Martinez del Rio, 1953a). Further to the east, in Tamaulipas, earlier cave sites containing abundant remains of plants and promising to be of extraordinary interest in regard to the earliest stages of agricultural activity in Mexico very recently have been under excavation by Richard MacNeish of the National Museum of Canada.

When proper surveys are carried out, the area of Central America south of Mexico eventually must provide good evidence of early occupations. As yet the only known site is that of the buried human footprints near Managua, Nicaragua (Williams, 1952), unfortunately not associated with any cultural materials.

Maya Area

One of the major research operations of recent years has been the concerted attack by the staff of the Department of Archaeology of the Carnegie Institution of Washington on the historically-known late site of Mayapan in northern Yucatan (Anonymous, 1952– ; Roys, 1952). This site has been the focal point of their attempt to work out in some detail the archeological picture of Yucatan during the last several centuries before the Spanish conquest. The period is a confused one in our knowledge of the Maya, especially as regards the correlation of the archeological findings with the historical accounts for the area. One of the important aspects of the work is, of course, the light it might throw on the question of the correlation of the Mayan and Christian calendars. Results so far indicate that the major occupation of Mayapan came after the Mexican Toltec occupation of Chichen Itza; a markedly degenerate form of Maya art and culture is exhibited.

---

[5] Beardsley, 1954; Heizer (ed.), 1953; Meighan, 1953; Meighan and Eberhart, 1953.

Other locations in Yucatan—Chichen Itza, Uxmal, and several Pauk sites—are being worked by Mexican archeologists, and many of the previously undescribed buildings at Chichen Itza fortunately have been covered by Ruppert (1952). Lothrop has provided an extensive report (1952) on the metal objects from the Cenote of Sacrifice of Chichen Itza, adding tremendously to our knowledge of the culture of the Mexican Period in Yucatan and its relationship to the Classic Maya, to Mexico, and other areas. The report also provides a much needed survey of metal working throughout Mesoamerica.

For other portions of the Lowland Maya area, the outstanding event of recent years has been the discovery of a sealed chamber and a large stone sarcophagus underneath the Temple of the Inscriptions at Palenque (Ruz, 1952a,b, 1954). The discovery is a spectacular one, not only for the unusual, but not unique, feature of having a temple pyramid built over a tomb, but also for the many fine examples of stone and stucco reliefs, jade, and mosaic objects that were included. This and other recent finds add greatly to the corpus of Palenque art which is certainly among the most sophisticated of the New World.

The westernmost portion of the Maya area in Campeche, Tabasco, and Chiapas is relatively unknown, but lately has been receiving special attention in the form of surface surveys and test excavations (Berlin, 1953; Drucker, 1952). The problems are those of understanding the relationships of the Maya and Olmec cultures and of tracing the origin or passage of the Toltec complex which played such an important role in post-Classic times in Mesoamerica.

Although some important publications have appeared (Longyear, 1952; Strömsvik, 1952), the only new work that has been attempted in the central and southeastern lowland Maya areas has been in British Honduras. The site of Caracol, with a series of unusual monuments, has been explored by Satterthwaite (1954b), and Willey has begun a project at the Barton River site near Baking Pot. The intention of the latter is to explore the long-neglected problem of the settlement pattern of a Classic Maya community. By mapping and working in a number of the many small mounds surrounding a modest ceremonial center on the site, it is hoped that some knowledge will be gained of the functional relationship of the living and agricultural areas to the religious center.

The archeology of the Highland Guatemala region is becoming relatively well known as the publication of the results of previous field operations is completed.[6] Shook and others of the Carnegie Institution of Washington have other publications in preparation, but it is to be regretted that this institution has terminated its program of active field work in this important area. In Highland Guatemala, remains of the Classic Period are rich and abundant with especially strong ties with Mexico, but more interesting perhaps is the long sequence of pre-Classic cultures (Shook and Kidder, 1952) that give hints of the area being a critical one as regards the origin of Mesoamerican civilization.

Finally we must note the appearance of Thompson's popular book (1954) on Maya history and culture and Brainerd's survey (1954) of Maya art.

Mexico

The complex culture-historical problems of that portion of Mesoamerica we might call Mexico proper—excluding the Maya area, that is—largely are in the hands of the staff of the Instituto Nacional de Antropologia e Historia. The archeologists of that institution have been occupied primarily with certain long-range programs of excavation at major sites, such as Monte Alban, Teotihuacan, Tula, and Tajin. The work is published from time to time in small articles, but one of much greater scope, resulting from the work at Monte Alban, is Caso and Bernal's extensive analysis (1952) of the Oaxaca urns. Much more than the documentation of many hundreds of examples of this class of object, the work is also a profound analysis of the religion of the successive peoples that occupied the cultural nucleus of Oaxaca. Another publication, resulting from earlier work by the Instituto on one of the major sites of Mexico, is Noguera's study (1954) of the pottery of Cholula.

---

[6] Berlin, 1952; Shook, 1952; Shook and Kidder, 1952; Smith, Robert E., 1952; Woodbury and Trik, 1953.

At the 5th Round Table Conference of the *Sociedad Mexicana de Antropologia*, held at Jalapa in 1951, progress was made in analyzing the chronological alignment and the relationships of the diverse cultures of the Gulf Coast region of Mexico (Bernal and Davalos, eds., 1953). Since then the results of several site excavations have become available (Drucker, 1952; Medellin Zenil, 1952; MacNeish, 1954a), as well as an analysis of the Classic Vera Cruz art style (Totonac or Tajín) which is an outstanding feature of the remains in this area (Proskouriakoff, 1954).

At the above-mentioned conference it became clear that one of the major problems of Mesoamerican archeology is that of the relative importance of the cultures of the lowlands and the highlands—or of these two contrasting ecological zones as environments in which the high cultures may have originated. In the local situation, the chronological position of the Olmec culture is of critical importance. Drucker (1952) believes that its full development came during the Classic Period, but, for others, it is older and constitutes the earliest full flowering of a Classic type in Mesoamerica. This is an archeological problem that can only be solved by further work, but its significance is very great because it involves our knowledge of the principles concerned in the origin of civilizations everywhere.

Various kinds of work by Mexican and foreign archeologists have been in progress recently in Central Mexico, of which preliminary reports were presented at the 6th Round Table Conference held in Mexico City in 1954. At Teotihuacan, the most exciting finds of recent years have been the numerous mural paintings (Villagra, 1952). These are more fully expressive of the ritual aspects of Teotihuacan culture than any other kinds of archeological objects, being counterparts of the codices of the post-Classic period. They indicate, among other things, that certain gods and ceremonial features of later times had their origin at least as early as Teotihuacan.

The all important native and Spanish literary sources relating to the central Mexican area continue to receive attention.[7] Aztec religion has been summarized again by Caso (1953a).

SOUTH AMERICA

Our comments on the progress of culture-historical research in South America can add little to the several recently published surveys that have made that area more accessible to the student than either of the major areas we have considered already. The basic compilation is, of course, the comprehensive *Handbook of South American Indians* (Steward, ed., 1946–1950). For a brief general survey of South American cultural history as a whole, but with emphasis on the high culture area of the Andes, we have the smaller handbook by Bennett and Bird (1949) and a similar review, but directed toward the art of the Andes, in Bennett's handsomely illustrated catalogue of the Museum of Modern Art's Andean Show of early 1954 (Bennett, 1954). Willey provides yet another brief but excellent survey (1953b) of South American archeology as a whole, along with a selected bibliographic coverage up to 1953, and Bennett (1953b) analyzes very concisely the approaches and methods that have characterized culture-historical research in the area.

All of these surveys are much more than compilations of our knowledge of the archeology and ethnography of South America. They include new culture-area classifications and attempts at historical reconstructions which, although certain to change, provide sound theoretical bases on which to build. It is interesting that South America should have received much fuller survey treatment of this kind than have other areas of the New World. In part this is undoubtedly due to the clear-cut contrasts in culture types and their seeming correlation with ecological zones exhibited by the area as a whole (Meggers, 1954).

---

[7] Mengin, 1952; Caso, 1954; Anderson and Dibble, 1950–1954; Garcia Granados, 1952.

Andean Area

Compared to previous years, when some of the larger coordinated research programs were active in Peru, little field archeology has been done in the Central Andean area during the last three years. We must note, however, W. D. Strong's Columbia University investigation (1954) in the Nazca and Ica Valleys which is the first major attempt to establish a stratigraphic sequence for the south Peruvian coast. Peruvian archeologists as well as those representing North American and European institutions have been occupied in various other projects.

Some notable publications have appeared which are the detailed reports of earlier excavations and whose principal results already have been incorporated in some of the summaries previously mentioned (Bennett, 1953a; Kroeber, 1953; Strong and Evans, 1952; Willey and Corbett, 1954). A particularly significant contribution is Willey's *Prehistoric Settlement Patterns in the Virú Valley, Perú* (1953a). This major work contains a mass of factual data on the nature of the archeological sites in the Virú Valley, arranged chronologically on the basis of Ford's ceramic analysis and providing a history of the social organization of the successive peoples of the area as this is reflected in the grouping of sites and buildings.

The northern Andes, comprising Ecuador and Colombia, were apparently not subject to the same kind of over-all cultural changes such as were in operation in Peru and Bolivia, so its archeological picture has remained relatively confused. Because of the importance of the area as a route of contact between the major areas of Mesoamerica and the central Andes, attention is continually being directed to it, but the recent publications only begin to elucidate the many problems centered there (Reichel-Dolmatoff, 1953, 1954a, b; Haury and Cubillos, 1953; Lehmann, 1953).

The art of the Andean area recently has been displayed in large exhibitions in the United States and Europe, and a book of excellent illustrations of Peruvian architecture and objects has been published by Doering (1952). Very welcome detailed studies of the graphic art on Mochica pottery (Kutscher, 1954) and of an important collection of Paracas textiles (Bird, 1954) have appeared in handsome volumes.

Lowland South America

The cultures of northernmost South America, the Antilles, and Central America exhibit many features in common and are now usually thought of as comprising the Circum-Caribbean area. The several portions mentioned are unequally well-known archeologically, the most obscure being the mainland portions of South America. Here, however, the current work of Cruxiant in Venezuela and the recent archeologic and ethnographic studies of Evans and Meggers in British Guiana give promise of remedying the situation (see also, Acosta Saignes, 1954).

A recent paper by Rouse (1952) and another by Bullbrook (1953) add to the relatively complete archeological picture of the Antilles that has emerged from continued stratigraphic excavations and surveys during the last two decades.

Central America is one of the great unknowns of American archeology, and there is need for more knowledge of it before the historically important interrelationships of Mesoamerica and the Andes can be visualized clearly. The cultures of the area were fairly elaborate ones in late periods, but they seem to have had little time depth. This is only an impression, however, for a recent paper is the first detailed stratigraphic analysis for any portion of the area that has appeared (Willey and Stoddard, 1954).

One notes a greatly increased activity and interest in ethnographic studies in the Amazon Basin region in recent years (Nimuendajú, 1952), but little archeological work is in progress. Evans and Meggers' study of the Marajo and related cultures at the mouth of the Amazon are yet unpublished in detail, but eventually will do much to fill a gaping hole in our knowledge of South American archeology. Marajo culture is seen as a late phenomenon resulting from influences coming out of western South America (see also Barata, 1953).

Canals Frau (1953) has provided a summary volume on the cultures of Argentina.

REFERENCES

Acosta Saignes, Miguel

1954 *Estudios de Etnologia Antigua de Venezuela.* Caracas: Universidad Central de Venezuela. 302 pp.

Aguilera, Francisco (ed.)

1954 *Handbook of Latin American Studies: 1951, No. 17.* Gainesville: University of Florida Press. 305 pp.

Anderson, Arthur J. O. and Dibble, Charles E.

1950–1954 *Florentine Codex* (Monographs of the School of American Research, No. 14. Parts II, III, IV, VIII, IX). Santa Fe: School of American Research and the University of Utah. (English translation of the Nahuatl version of the Codex or *General History of the Things of New Spain* by Fray Bernardino de Sahagun. Five parts of a projected thirteen parts have been published to date.)

Anonymous

1952 *Current Reports,* Department of Archaeology, Carnegie Institution of Washington (contains a series of preliminary reports by the Carnegie Institution staff on the work at Mayapan in Yucatan. Authors contributing one or more papers each are: Morris R. Jones, Edwin M. Shook, William R. Bullard, Jr., Karl Ruppert, A. L. Smith, Robert E. Smith, H. E. D. Pollock, Gustav Stromsvik, Robert M. Adams, Jr., and Heinrich Berlin).

Aveleyra Arroyo de Anda, Luis and Maldonado-Koerdell, Manuel

1952 "Asociación de Artefactos con Mamut en el Pleistoceno Superior de la Cuenca de México," *Revista Mexicana de Estudios Antropologicos,* Tomo XIII, No. 1, pp. 3–30.

1953 "Association of Artifacts with Mammoth in the Valley of Mexico," *American Antiquity,* Vol. XVIII, No. 4, pp. 332–340 (English condensation of previous entry).

Barata, Frederico

1953 "Uma Análise Estilistica da Ceràmica de Santarem," *Cultura,* No. 5, pp. 185–205. Caracas.

Beardsley, Richard K.

1954 *Temporal and Areal Relationships in Central California Archaeology* (Reports of the University of California Archaeological Survey, Nos. 24 and 25). 62 pp. and 127 pp.

Bennett, Wendell C.

1953a *Excavations at Wari, Ayacucho, Peru* (Yale University Publications in Anthropology, No. 49). New Haven: Yale University Press. 126 pp.

1953b "New World Culture History: South America," pp. 211–225 in Kroeber, A. L. and others, *Anthropology Today.* Chicago: University of Chicago Press. 966 pp.

1954 *Ancient Arts of the Andes.* New York: The Museum of Modern Art. 187 pp.

Bennett, Wendell C. and Bird, Junius B.

1949 *Andean Cultural History* (American Museum of Natural History Handbook Series, No. 15). New York. 319 pp.

Berlin, Heinrich

1952 "Excavaciones en Kaminal Juyu: Monticulo D-III-13," *Antropologia e Historia de Guatemala,* Vol. IV, No. 1, pp. 1–18.

1953 "Archaeological Reconnaissance in Tabasco," *Current Reports* of the Carnegie Institution of Washington. Department of Archaeology, No. 7, pp. 102–135.

Bernal, Ignacio and Davalos Hurtado, Eusebio (eds.)

1953 "Huastecos, Totonacos y sus Vecinos," *Revista Méxicana de Estudios Antropologicos,* Tomo XIII, Nos. 2–3. 567 pp. (contains the papers presented at the 5th Mesa Redonda of the Sociedad Mexicana de Antropologia held in Jalapa, Vera Cruz, in July, 1951).

Bird, Junius B.

1954 *Paracas Fabrics and Nazca Needlework. 3rd Century B.C.–3rd Century A.D.* (The Textile Museum, Catalogue Raisonne). Washington, D. C. 125 pp.

BRAINERD, GEORGE W.

1954 *The Maya Civilization.* Los Angeles: Southwest Museum. 93 pp.

BULLBROOK, J. A.

1953 *On the Excavation of a Shell Mound at Palo Seco, Trinidad, B. W. I.* (Yale University Publications in Anthropology, No. 50). New Haven: Yale University Press. 114 pp.

BYERS, DOUGLAS S.

1954 "Bull Brook—A Fluted Point Site in Ipswich, Massachusetts," *American Antiquity*, Vol. XIX, No. 4, pp. 343–351.

CANALS FRAU, SALVADOR

1953 *Las Poblaciones Indigenas de la Argentina.* Buenos Aires: Editorial Sudamericana. 575 pp.

CARTER, GEORGE F.

1953 "Plants Across the Pacific," pp. 62–71 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). Salt Lake City, Utah: University of Utah. 97 pp.

CASO, ALFONSO

1953a *El Pueblo del Sol.* Mexico: Fondo de Cultura Económica. 125 pp.

1953b "New World Culture History: Middle America," pp. 226–237 in Kroeber, A. L. and others, *Anthropology Today.* Chicago: University of Chicago Press. 966 pp.

1954 *Interpretacion del Codice Gomez de Orozco.* Mexico: Talleres de Impresion de Estampillas y Valores. 20 pp.

CASO, ALFONSO and BERNAL, IGNACIO

1952 *Urnas de Oaxaca* (Memorias del Instituto Nacional de Antropologia e Historia, II). Mexico: Instituto Nacional de Antropología e Historia. 389 pp.

COLLINS, HENRY B., JR.

1954 *Arctic Area* (Programa de Historia de America I 2). Mexico: Instituto Panamericano de Geografia e Historia, Comision de Historia. 152 pp.

COMAS, JUAN

1953 *Bibliografia Selectiva de Las Culturas Indigenas de America.* Mexico: Instituto Panamericano de Geografia e Historia, Comision de Historia. 292 pp.

COMAS, JUAN (coordinador)

1953–1954 *Programa de Historia de America.* Periodo Indigena. 10 Vols. Mexico: Instituto Panamericano de Geografia e Historia. Comision de Historia. (This is a valuable series of summaries and bibliographies. The volumes published to date are as follows: I. *Periodo Indigena:* 1. *Origins*: Hannah M. Wormington; 2. *Arctic Area*: Henry B. Collins, Jr.; 3. *United States and Canada*: James B. Griffin; 4. *Mesoamerica*: Ignacio Bernal; 5. *Zona Circumcaribe*: Miguel Acosta Saignes; 6. *Colombia*: G. Reichel-Dolmatoff; 7. *Guianas*: Irving Rouse; 8. *Brasil*: Emilio Willems; 9. *Altiplano Andino*: Luis E. Valcárcel; 10. *Región Meridional de América del Sur:* Fernando Márquez Miranda; Suplementos 4. and 6. *Mesoamerica y Colombia*: I. Bernal y G. Reichel-Dolmatoff.)

COVARRUBIAS, MIGUEL

1954 *The Eagle, the Jaguar, and the Serpent.* New York: Alfred A. Knopf. 314 pp.

DAIFUKU, HIROSHI

1952 "The Pit House in the Old World and in Native North America," *American Antiquity*, Vol. XVIII, No. 1, pp. 1–7.

DEUEL, THORNE (ed.)

1952 *Hopewellian Communities in Illinois* (Scientific Papers, Vol. V, Illinois State Museum). Springfield. 271 pp.

DOERING, HEINRICH UBBELOHDE

1952 *The Art of Ancient Peru.* New York: Frederick A. Praeger. 240 pp.

DRUCKER, PHILIP

1952 *La Venta, Tabasco. A Study of Olmec Ceramics and Art* (Bureau of American Ethnology, Bulletin 153). Washington: Smithsonian Institution. 257 pp.

DRUCKER, PHILIP and CONTRERAS, EDUARDO

1953 "Site Patterns in the Eastern Part of Olmec Territory," *Journal of the Washington Academy of Sciences*, Vol. 43, No. 10, pp. 380–396.

EKHOLM, GORDON F.

1953 "A Possible Focus of Asiatic Influence in the Late Classic Cultures of Mesoamerica," Ekholm, Gordon F.—Cont'd

pp. 72–89 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). Salt Lake City, Utah: University of Utah. 97 pp.

Ferdon, Edwin N., Jr.

1953 *Tonalá, Mexico. An Archaeological Survey* (Monographs of the School of American Research, No. 16). Santa Fe: School of American Research. 126 pp.

Ford, James A.

1952 "Measurements of Some Prehistoric Design Developments in the Southeastern States," *Anthropological Papers of the American Museum of Natural History*, Vol. 44, Part 3, pp. 311–384.

Garcia Granados, Rafael

1952 *Diccionario Biografico de Historia Antigua de Mexico*, Tomo 1. Mexico: Instituto de Historia. 599 pp.

Giddings, J. L., Jr.

1952 *The Arctic Woodland Culture of the Kobuk River* (Museum Monographs). Philadelphia: The University Museum, University of Pennsylvania. 144 pp.

Goggin, John M.

1952 *Space and Time Perspective in Northern St. Johns Archeology, Florida* (Yale University Publications in Anthropology, No. 47). New Haven. 147 pp.

Griffin, James B. (ed.)

1952 *Archeology of Eastern United States*. Chicago: University of Chicago Press. 392 pp.

Groth-Kimball, Irmgard and Feuchtwanger, Franz

1954 *The Art of Ancient Mexico*. London and New York: Thames and Hudson. 125 pp.

d'Harcourt, Raoul

1953 "De Quelques Liens Archéologiques Intercontinentaux en Amérique," *Journal de la Société des Americanistes*, Tome XLII, pp. 271–299.

Haury, Emil W. (ed.)

1954 "Southwest Issue" of *American Anthropologist*, Vol. 56, No. 4, pp. 527–731.

Haury, Emil W. and Cubillos, Julio Cesar

1953 *Investigaciones Arqueologicas en la Sabana de Bogota, Colombia (Cultura Chibcha)* (University of Arizona Bulletin, Vol. XXIV, No. 2). Tucson: University of Arizona. 104 pp.

Haury, Emil W.; Antevs, Ernst; and Lance, John F.

1953 "Artifacts with Mammoth Remains, Naco, Arizona," *American Antiquity*, Vol. XIX, No. 1, pp. 1–24.

Heine-Geldern, Robert von

1954 "Die Asiatische Herkunft der Süd amerikanischen Metalltechnik," *Paideuma, Mitteilungen zur Kulterkunde*, Band 5, Heft 7/8, pp. 347–423. Bamberg.

Heizer, Robert F. (ed.)

1953 *The Archaeology of the Napa Region* (Anthropological Records 12:6). Berkeley and Los Angeles: University of California Press. pp. 225–358.

Heyerdahl, Thor

1952 *American Indians in the Pacific. The Theory behind the Kon-Tiki Expedition*. Chicago, New York, San Francisco, Washington: Rand McNally & Company. 821 pp.

Hurt, Wesley R., Jr.

1953 "A Comparative Study of the Preceramic Occupations of North America," *American Antiquity*, Vol. XVIII, No. 3, pp. 204–222.

Jennings, Jesse D.

1953 "Danger Cave: A Progress Summary," *El Palacio*, Vol. 60, No. 5, pp. 179–213. Santa Fe.

Knuth, Eigil

1954 "The Paleo-Eskimo Culture of Northeast Greenland Elucidated by Three New Sites," *American Antiquity*, Vol. XIX, No. 4, pp. 367–381.

Krieger, Alex D.

1953 "New World Culture History: Anglo-America," pp. 238–264 in Kroeber, A. L., *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

Kroeber, A. L.

1953 *Paracas Cavernas and Chavin* (University of California Publications in American Archaeology and Ethnology, Vol. 40, No. 8). pp. 313–348.

Kutscher, Gerdt

1954 *Cerámica del Perú Septentrional. Figuras Ornamentales en Vasijas de los Chimúes Antiguos* (Monumenta Americana I.). Berlin: Gebr. Mann. 57 pp. (Title and text are in both Spanish and German. Includes 80 pp. of designs from pottery.)

Laughlin, William S. and Marsh, Gordon H.

1954 "The Lamellar Flake Manufacturing Site on Anangula Island in the Aleutians," *American Antiquity*, Vol. XX, No. 1, pp. 27–39.

Lehmann, Henri

1953 "Archéologie du Sud-Ouest Colombien," *Journal de la Société des Americanistes*, Tome XLII, pp. 199–270.

Libby, Willard F.

1952a "Chicago Radiocarbon Dates III," *Science*, Vol. 116, No. 3025, pp. 673–681.

1952b *Radiocarbon Dating*. Chicago: University of Chicago Press. 124 pp.

1954a "Chicago Radiocarbon Dates IV," *Science*, Vol. 119, No. 3083, pp. 135–140.

1954b "Chicago Radiocarbon Dates V," *Science*, Vol. 120, No. 3123, pp. 733–742.

Longyear, John M., III

1952 *Copan Ceramics. A Story of Southeastern Maya Pottery* (Carnegie Institution of Washington, Publ. No. 597). Washington, D. C. 114 pp.

Lothrop, Samuel Kirkland

1952 *Metals from the Cenote of Sacrifice, Chichen Itza, Yucatan* (Memoirs of the Peabody Museum of Archaeology and Ethnology, Harvard University, Vol. X, No. 2). 139 pp.

Lowie, Robert H.

1954 *Indians of the Plains* (Anthropological Handbook No. 1, The American Museum of Natural History). New York: McGraw-Hill Book Company. 222 pp.

MacNeish, Richard S.

1952 *Iroquois Pottery Types* (National Museum of Canada, Bulletin No. 124). Ottawa. 166 pp.

1954a "An Early Archaeological Site near Panuco, Vera Cruz," *Transactions of the American Philosophical Society*, Vol. 44, n.s., Part 5, pp. 539–641.

1954b "The Pointed Mountain Site Near Fort Liard, Northwest Territories, Canada," *American Antiquity*, Vol. XIX, No. 3, pp. 234–253.

Martin, Paul S. *et al.*

1952 *Mogollon Cultural Continuity and Change. The Stratigraphic Analysis of Tularosa and Cordova Caves* (Fieldiana: Anthropology, Vol. 40). Chicago: Chicago Natural History Museum. 528 pp.

Martin, Paul S.; Rinaldo, John B. and Bluhm, Elaine

1954 *Caves of the Reserve Area* (Fieldiana: Anthropology, Vol. 42). Chicago: Chicago Natural History Museum. 227 pp.

Martinez del Rio, Pablo

1953a "La Cueva Mortuoria de La Candelaria, Coahuila," *Cuadernos Americanos*, Año XII, Vol. LXX, 4, pp. 177–204. Mexico.

1953b *Los Origenes Americanos*. Tercera Edición. Mexico: Paginas del Siglo XX. 451 pp.

Medellin Zenil, Alfonso

1952 *Exploraciones en Quauhtochco*. Jalapa, Ver.: Gobierno del Estado de Veracruz, Departamento de Antropologia. 95 pp.

Meggers, Betty V.

1954 "Environmental Limitation on the Development of Culture," *American Anthropologist*, Vol. 56, No. 5, pp. 801–824.

Meighan, Clement W.

1953 *The Coville Rock Shelter, Inyo County, California* (Anthropological Records 12:5). Berkeley and Los Angeles: University of California Press. pp. 171–223.

Meighan, Clement W. and Eberhart, Hal

1953 "Archaeological Resources of San Nicolas Island, California," *American Antiquity*, Vol. XIX, No. 2, pp. 109–125.

Meldgaard, Jorgen

1952 "A Paleo-Eskimo Culture in West Greenland," *American Antiquity*, Vol. XVII, No. 3, pp. 222–230.

MENGIN, ERNEST

1952 "Commentaire du Codex Mexicanus Nos. 23–24 de la Bibliothèque Nationale de Paris," *Journal de la Société des Américanistes*, Tome XLI, pp. 387–498, and supplement.

MORRIS, EARL H. and BURGH, ROBERT F.

1954 *Basket Maker II Sites near Durango, Colorado* (Carnegie Institution of Washington, Publication 604). 135 pp.

MORSS, NOEL

1954 *Clay Figurines of the American Southwest* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XLIX, No. 1). 73 pp.

MURDOCK, GEORGE PETER

1953 *Ethnographic Bibliography of North America*. 2nd ed. New Haven: Human Relations Area Files. 239 pp.

NIMUENDAJÚ, CURT

1952 *The Tukuna* (University of California Publications in American Archaeology and Ethnology, Vol. 45). Berkeley and Los Angeles: University of California Press. 209 pp.

NOGUERA, EDUARDO

1954 *La Ceramica Arqueologica de Cholula*. Mexico: Editorial Guarania. 315 pp.

PHILLIPS, PHILIP and WILLEY, GORDON R.

1953 "Method and Theory in American Archaeology: An Operational Basis for Culture-Historical Integration," *American Anthropologist*, Vol. 55, No. 5, pp. 615–633.

PORTER, MURIEL NOÉ

1953 *Tlatilco and the Pre-Classic Cultures of the New World* (Viking Fund Publications in Anthropology, No. 19). New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 104 pp.

PROSKOURIAKOFF, TATIANA

1954 "Varieties of Classical Central Veracruz Sculpture," *Contributions to American Anthropology and History*, No. 58, pp. 61–121 (preprinted from Carnegie Institution of Washington, Publication 606).

QUIMBY, GEORGE L.

1954 "Cultural and Natural Areas Before Kroeber," *American Antiquity*, Vol. XIX, No. 4, pp. 317–331.

RANDS, ROBERT L.

1953 *The Water Lily in Maya Art: A Complex of Alleged Asiatic Origin* (Anthropological Papers No. 34, Bureau of American Ethnology Bulletin 151, Smithsonian Institution). pp. 75–153.

REICHEL-DOLMATOFF, GERARDO

1953 "Contactos y Cambios Culturales en la Sierra Nevada de Santa Marta," *Revista Colombiana de Antropologia*, Vol. I, No. 1, pp. 15–122. Bogotá.

1954a "Investigaciones Arqueológicas en la Sierra Nevada de Santa Marta, Partes 1 y 2," *Revista Colombiana de Antropologia*, Vol. II, No. 2, pp. 145–206. Bogotá.

1954b "A Preliminary Study of Space and Time Perspective in Northern Colombia," *American Antiquity*, Vol. XIX, No. 4, pp. 352–366.

RITCHIE, WILLIAM A.

1952 *The Chance Horizon. An Early Stage of Mohawk Iroquois Cultural Development* (New York State Museum, Circular 29). Albany: The University of the State of New York. 53 pp.

1953 "A Probable Paleo-Indian Site in Vermont," *American Antiquity*, Vol. XVIII, No. 3, pp. 249–258.

1954 *Dutch Hollow, An Early Historic Period Seneca Site in Livingston County, New York* (Researches and Transactions of the New York State Archeological Association, Vol. XIII, No. 1). Albany. 98 pp.

RITCHIE, WILLIAM A.; LENIG, DONALD and MILLER, P. SCHUYLER

1953 *An Early Owasco Sequence in Eastern New York* (New York State Museum, Circular 32). Albany: The University of the State of New York. 93 pp.

ROBERTS, FRANK H. H., JR. (dir.)

1953 *River Basin Surveys Papers. Inter-Agency Archeological Salvage Program* (Bureau of American Ethnology, Bulletin 154). Washington: Smithsonian Institution. 336 pp.

ROUSE, IRVING

1952 *Porto Rican Prehistory: Introduction; Excavations in the West and North* (Scientific Survey of Porto Rico and the Virgin Islands, Vol. XVIII, Part 3). New York: The New York Academy of Sciences. pp. 305–460.

ROYS, RALPH L.

1952 *Conquest Sites and the Subsequent Destruction of Maya Architecture in the Interior of Northern Yucatan* (Contributions to American Anthropology and History, No. 54). Washington: Carnegie Institution of Washington (Publication 546). pp. 129–182.

RUPPERT, KARL

1952 *Chichen Itza. Architectural Notes and Plans* (Carnegie Institution of Washington, Publ. No. 595). 169 pp. Washington, D. C.

RUZ LHUILLIER, ALBERTO

1952a "Exploraciones en Palenque: 1950," *Anales del Instituto Nacional de Antropologia e Historia*, Tomo V, pp. 25–45. Mexico.

1952b "Exploraciones en Palenque: 1951," *Anales del Instituto Nacional de Antropologia e Historia*, Tomo V, pp. 47–66. Mexico.

1954 "La Piramide-Tumba de Palenque," *Cuadernos Americanos*, Año 13, Vol. LXXIV, pp. 141–159. Mexico.

SATTERTHWAITE, LINTON, JR.

1952 *Piedras Negras Archaeology: Architecture. Part V. Sweathouses*. Philadelphia: University Museum, University of Pennsylvania. 91 pp.

1954a *Piedras Negras Archaeology: Architecture. Part VI. Unclassified Buildings and Substructures*. Philadelphia: University Museum, University of Pennsylvania. 92 pp.

1954b "Sculptured Monuments from Caracol, British Honduras," *University Museum Bulletin*, Vol. 18, Nos. 1–2. pp. 3–45. Philadelphia.

SAUER, CARL O.

1952 *Agricultural Origins and Dispersals*. New York: The American Geographical Society. 110 pp.

SEARS, WILLIAM H.

1953 *Excavations at Kolomoki. Season III and IV. Mound D* (University of Georgia Series in Anthropology, No. 4). Athens: University of Georgia Press. 94 pp.

SELLARDS, E. H.

1952 *Early Man in America. A Study in Prehistory*. Austin: University of Texas Press. 211 pp. (contains an especially full bibliography on the subject).

SHOOK, EDWIN M.

1952 "Lugares Arqueologios del Altiplano Meridional Central de Guatemala," *Antropologia e Historia de Guatemala,* Vol. IV, No. 2, pp. 1–40.

SHOOK, EDWIN M. and KIDDER, ALFRED V.

1952 *Mound E-III-3, Kaminaljuyu, Guatemala* (Contributions to American Anthropology and History, No. 53). Washington: Carnegie Institution of Washington. pp. 33–127.

SMITH, ROBERT E.

1952 *Pottery from Chipoc, Alta Verapaz, Guatemala* (Contributions to American Anthropology and History, No. 56). Washington: Carnegie Institution of Washington. pp. 215–236.

SMITH, WATSON

1952 *Kiva Mural Decorations at Awatovi and Kawaika-a* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XXXVII). 363 pp.

SOLECKI, RALPH S.

1953 *Exploration of an Adena Mound at Natrium, West Virginia* (Anthropological Papers, No. 40, in Bureau of American Ethnology Bulletin 151). Washington: Smithsonian Institution, pp. 313–395.

STEWARD, JULIAN H. (ed.)

1946–1950 *Handbook of South American Indians* (Bureau of American Ethnology, Bulletin 143). Washington, D. C.: Smithsonian Institution. 6 Vols.

Strömsvik, Gustav

1952 *The Ball Courts at Copan. With Notes on Courts at La Union, Quirigua, San Pedro Pinula and Asuncion Mita* (Contributions to American Anthropology and History, No. 55). Washington: Carnegie Institution of Washington. pp. 183–214.

Strong, William Duncan

1954 "Recent Archeological Discoveries in South Coastal Peru," *Transactions of The New York Academy of Sciences*, Ser. II, Vol. 16, No. 4, pp. 215–218.

Strong, William Duncan and Evans, Clifford, Jr.

1952 *Cultural Stratigraphy in the Virú Valley, Northern Peru. The Formative and Florescent Epochs* (Columbia Studies in Archeology, Vol. IV). New York: Columbia University Press. 373 pp.

Stubbs, Stanley A. and Stallings, W. S., Jr.

1953 *The Excavation of Pindi Pueblo, New Mexico* (Monographs of the School of American Research and the Laboratory of Anthropology, No. 18). Santa Fe. 165 pp.

Swanton, John R.

1952 *The Indian Tribes of North America* (Bureau of American Ethnology, Bulletin 145). Washington, D. C.: Smithsonian Institution. 726 pp.

Thompson, J. Eric S.

1954 *The Rise and Fall of Maya Civilization*. Norman: University of Oklahoma Press. 287 pp.

Tolstoy, Paul

1953 "Some Amerasian Pottery Traits in North Asian Prehistory," *American Antiquity*, Vol. XIX, No. 1, pp. 25–39.

Villagra, Agustín

1952 "Teotihuacan, Sus Pinturas Murales," *Anales del Instituto Nacional de Antropologia e Historia*, Tomo V, pp. 67–74. Mexico.

Wauchope, Robert

1954 "Implications of Radiocarbon Dates from Middle and South America," *Middle American Research Records*, Vol. II, No. 2, pp. 19–39. New Orleans.

Webb, William S.

1952 *The Jonathan Creek Village. Site 4, Marshall County, Kentucky* (University of Kentucky Reports on Anthropology, Vol. VIII, No. 1). Lexington. 141 pp.

Wendorf, Fred

1953 *Archaeological Studies in the Petrified Forest National Monument* (Museum of Northern Arizona, Bulletin 27). Flagstaff. 203 pp.

1954 "A Reconstruction of Northern Rio Grande Prehistory," *American Anthropologist*, Vol. 56, No. 2, pp. 200–227.

Wendorf, Fred (ed.)

1953 *Salvage Archaeology in the Chama Valley, New Mexico* (Monograph of the School of American Research, No. 17). Santa Fe. 124 pp.

Willey, Gordon R.

1953a *Prehistoric Settlement Patterns in the Virú Valley, Perú* (Bureau of American Ethnology, Bulletin 155). Washington, D. C.: Smithsonian Institution. 453 pp.

1953b "A Survey of South American Archaeology," *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 83, Part 1, pp. 58–64.

1953c "A Pattern of Diffusion-Acculturation," *Southwestern Journal of Anthropology*, Vol. 9, No. 4, pp. 369–384.

Willey, Gordon R. and Corbett, John M.

1954 *Early Ancón and Early Supe Culture* (Columbia Studies in Archeology and Ethnology, Vol. III). New York: Columbia University Press. 180 pp.

Willey, Gordon R. and Stoddard, Theodore L.

1954 "Cultural Stratigraphy in Panama: A Preliminary Report on the Girón Site," *American Antiquity*, Vol. XIX, No. 4, pp. 332–343.

Williams, Howel

1952 *Geologic Observations on the Ancient Human Footprints near Managua, Nicaragua* (Contributions to American Anthropology and History, No. 52). Washington, D. C.: Carnegie Institution of Washington. 31 pp.

WITTHOFT, JOHN

1952 "A Paleo-Indian Site in Eastern Pennsylvania. An Early Hunting Culture," *Proceedings of the American Philosophical Society*, Vol. 96, No. 4, pp. 464–495.

WOODBURY, RICHARD B.

1954 *Prehistoric Stone Implements of Northeastern Arizona* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XXXIV). 240 pp.

WOODBURY, RICHARD B.; TRIK, AUBREY S.; *et al.*

1953 *The Ruins of Zaculeu, Guatemala.* Boston: United Fruit Company. 2 Vols.

Archeological Theories and Interpretations

EMIL W. HAURY

Dr. Haury, since 1937, has been Head of the Department of Anthropology, University of Arizona, and, since 1938, Director of the Arizona State Museum. Best known for his archeological activities in the southwestern United States, he has also conducted field research in Colombia on the Chibcha. A Guggenheim Fellow, 1949–1950, and the 1950 Viking Fund Medalist in Archeology, Dr. Haury is President-elect (for 1956) of the American Anthropological Association. His principal publications are The Mogollon Culture of Southwestern New Mexico, 1936; with others, Excavation at Snaketown, Material Culture, 1937; and, with others, The Stratigraphy and Archaeology of Ventana Cave, Arizona, 1950.

ARCHEOLOGY, like the past cultures which are the target of the archeologist's endeavors, has undergone changes in its philosophies, precepts, and methods with each passing year. The rate of this change, its direction and effectiveness are factors which often do not become apparent until, in larger retrospect, they may be gauged against still other accomplishments. To seek, therefore, the meaningful theories and interpretations of the past two years, is to look at them literally by being on top of them and without the benefit of the perspective that future time alone can provide. Yet, out of the swelling tide of archeological literature one sees the emergence of trends, changing and newly contrived concepts, and shifts in emphasis. The reviewer, charged with the task of distilling the content of recent writings into a few pages, will quite naturally be swayed by what interests him both topically and regionally. The emphases in this paper, as well as the omissions, are to be judged therefore in these terms.

Most of the archeologist's labors have been devoted to a routine recording of his findings, often colorless and lacking in a sense of history. This is not so because of design or ineptness but arises from the limitations imposed by the subject matter itself. The lamented confusing array of descriptive facts must inevitably constitute the point of departure for excursions into other fields. With the infusion of chronology, the pattern of history emerges and the framework is erected for sound assessment of a functional and processual nature of culture growth and change.

Improved techniques and broadened concepts have, in recent years, brought a self assurance and maturity to the profession. This is reflected in an increasing number of problem-conscious projects, drawing often upon the aid from disciplines other than archeology, and in a shift from the purely historical to functional interpretations. That this swing of the pendulum is a slow one can be illustrated by an analysis along broad topical lines of archeological titles in a few of the leading professional journals of the United States during two 2-year periods, 1943–44 and 1953–54. Two of these, the *Southwestern Journal of Anthropology* and the *American Anthropologist,* give broad coverage to anthropological subjects while the third, *American Antiquity,* restricts itself to archeological reporting.

In the accompanying Table 1 it is evi-

TABLE 1

TOPICAL ANALYSIS OF ARCHEOLOGICAL ARTICLES IN UNITED STATES PROFESSIONAL ANTHROPOLOGICAL JOURNALS

Types of Major Articles	*Southwestern Journal of Anthropology*		*American Anthropologist*		*American Antiquity*	
	1945–46[1]	1953–54	1943–44	1953–54	1943–44	1953–54
Descriptive	3	2	3	0	41	20
Technology and Methodology	1	3	0	2	4	6
Comparative and Interpretive	8	7	3	10	16	12
Theoretical	0	2	2	5	2	1

[1] First two-year period of *Journal*.

dent that the general journals favor the comparative-interpretive and theoretical articles over those of a more descriptive and analytic nature. The broad readership of these journals understandably helps in setting the editorial policy along these lines. One may suppose that more theoretical papers would have been accepted and published if available. A somewhat better barometer of archeological reporting is to be found in the pages of *American Antiquity*. Since this journal is devoted to archeology only, a high frequency of descriptive articles is to be expected. Comparative-interpretive works fared quite well but in the theoretical area few papers were printed, and the ten-year comparison reveals no upward trend. It is only fair to note that the narrow limits of article length in journals prevent the inclusion of the larger works in which the functional and theoretical interpretations are found after an extended consideration of the data. A somewhat higher ratio of the latter to the descriptive and methodological reports will be found outside the professional journals.

THEORY AND METHODS

The expanded horizons of archeological studies in the Americas are reflected in a series of significant papers covering a variety of aspects of theory and method. It is in this area of thought that the present is most sharply set apart from the old antiquarianism and from the more recent period when the dominant point of view was order and system. The period of introspection and the assessment of objectives began a decade or more ago, well before the two-year period covered by this review, and the number of works devoted to these ends is increasing. Among those of recent date which stand out are Phillips' and Willey's formulation of principles which they advocate as a guide to New World studies. In their own words (1953, p. 631) these are:

> "(1) That the primary emphasis continue to be placed on the organization of components and phases (or their equivalents) in local and regional sequences under stratigraphic control; (2) that phases be studied intensively as the effective context of archeological culture; (3) that their internal spatial and temporal dimensions be kept within manageable limits of magnitude; and (4) that their external spatial, temporal and formal relationships be studied and expressed in terms of traditions and horizons without recourse to any taxonomic formulations of a higher order than themselves."

The full meaning of these statements must be obtained by studying the closely reasoned supporting text. It may be said without prejudice toward other efforts to examine the conceptual bases of archeology, that Phillips and Willey have presented us with an exceptionally sound philosophical and operational method. Rouse's "The Strategy of Culture History" (1953) and Willey's review (1953b) of methodological structures are further examples of the current trend to inquire into what archeology is all about and how its objectives can best be met. Hawkes (1954) has some pertinent comments about theory and method, too, from the point of view of the Old World.

Cultural reconstructions, whether slanted historically or functionally, depend upon the concept of types as a working tool. Ford (1954a) and Steward (1954) have clarified the several meanings which the word "type" possesses, designated as "morphological," "historical-index," "functional," and "cultural." All of these conceivably can be employed in the classification of the same cultural phenomenon, each having relevancy to a particular problem. The significance of these types, briefly stated, is form, chronological position, cultural use or role, and the last, the ". . . classification of whole cultures in terms of functionally most important features" (Steward, 1954, p. 57). Ordinarily the progression in the application of these different meanings follows closely the order of reference. The first two are the means of ascertaining the time-space dimensions of cultural objects. Not infrequently the archeologist's endeavors end there because knowledge of function is not to be had. But it is understandable that if cultural reconstruction and the classification of cultures is to be accomplished the other meanings of type also must be introduced.

All of this is well and good. Differences of opinion arise, however, the moment these concepts are put to a test on such basic questions as to whether or not types exist in culture and are discoverable by the use of skilful methodologies (Spaulding, 1953a; Ford, 1954a), and as to the value of and interpretations put upon typological studies (Ford, 1952, 1954b; Spaulding, 1953b). In time some degree of unanimity may be reached; but if one remembers that change is as inherent in concepts—or at least it should be—as in cultures, there need be no insistence on complete agreement.

Once accurate chronologies for cultural events have been established, the way is open for inferences of other kinds as, for example, classifications based on process, and the extraction of information about social, political, and religious activities of people. Willey's (1953b) discernment of diffusion-acculturation patterns in central Georgia, northern Yucatan, and north coastal Peru resulting from "cultural colonization" is an example of the former; his analysis of Virú Valley settlement patterns (1953c) is a classic example of the latter. It should be noted in this connection that the Virú Valley program was organized around the central problem of shedding light on all facets of the culture history of a single coastal valley in northern Peru. This required the kind of coordinated effort of both workers and institutions not seen heretofore in the American field, and even now, before all reports have been published, the endeavor may be judged eminently successful.

On a higher level of abstraction have been the efforts to present regional cultural activity in terms of the co-tradition, a concept first proposed for Peru by Bennett (1948). In theory the co-tradition is a mechanism for expressing relationships, the degree of "historical intimacy," of locally identifiable groups within a larger area as Peru or the Southwest. The advantage of this concept in theory is that it prepares the base from which analyses can be made of such questions as the effects of diffusion and cultural evolution in producing a certain widespread cultural uniformity. The application of the co-tradition concept immediately evokes debate over the definition of the concept itself and the degree of fluidity that should be maintained in arranging the cultural elements. This is well illustrated for the Southwest by the succession of works by Martin and Rinaldo (1951), Daifuku (1952), and Wheat (1954). Wheat may well have averted extensive wrangling by advocating that this framework ". . . must be more flexible in conception and application than any of the schemes yet proposed" (Wheat, 1954, p. 585).

Among methodological advances in fields other than archeology, but which are nevertheless destined to aid it, one in particular should be singled out. This is lexico-statistic dating (Swadesh, 1952). Studies in comparative linguistics have led to a theoretical principle that language changes at a relatively constant rate, and that elapsed time for language divergences is calculable. For example, where two languages are the end products of separation from a common base in prehistory, the time of this separation may be measured by finding the percentage of words retained in common in a test vocabulary and by applying a suitable formula. Eskimo and Aleut languages, mutually unintelligible now, are regarded as divergent forms of an older single language. Lexico-statistic calculations provide for about 2,900 years since these languages were one and the same (Swadesh, 1952, p. 453). The archeological implications of this are not difficult to see.

To test the method for American linguistic groupings a series of entities were compared, and archeologists were invited to test the consistency of the indicated time depths in the light of their own findings (Swadesh *et al.*, 1954). Remarkably close agreement was noted in most cases and this includes certain areas, such as the Arctic, where dendrochronology and radiocarbon dating controls are available (Hirsch, 1954). Lexico-statistic dating must, of course, be submitted to more severe critical examination than it has yet received but the initial results are promising. Its acceptance will allow, for the first time, the archeologist to speak with confidence about the linguistic affiliation of the people whose pots and pans he has studied.

The past two years have witnessed substantial advances in the highly technical field of carbon 14 analysis marked by the establishment of new laboratories, by refined technology, and by the release of numerous dates. New laboratories will relieve, to some extent, the pressure in existing laboratories and should result in further and concerted research on the highly important problem of contamination and the determination of the kinds of materials which have the highest degree of reliability. The relationship of our knowledge in these matters to synthesis and interpretation is obvious. It seems likely that some of the troublesome discrepancies, not only between radiocarbon dates from the same complex, but also between these assays and dates inferred by other lines of inquiry, are rooted in the question of the impurity of the sample. Development of the highly promising gas method of measurement will reduce counting time, thereby increasing the number of sample counts, make assays on samples of smaller volume of original specimens possible, and, of more importance, will about double the time range of the solid-carbon method.

An increasing number of dates is being made available for geological phenomena in both the Old and New Worlds, which ultimately will bear on the dating of early man. This is especially true for northern North America where the correlation of available dates will clarify late glacial history. That all data will not be accepted at face value is made abundantly clear by Antevs' serious questioning (1953, pp. 219–223) of the Two Creeks forest bed (Wisconsin) age of about 11,400 years (Libby, 1952, p. 88). By extension, this date would apply to the Valders-Mankato glacial maximum, about 8,000 years later than has been calculated from varves and other studies. These differences will have to be settled by the geologists before the archeologist confidently can use the results. Perhaps it is not going too far afield to suggest that, paradoxically, archeology ultimately may help to resolve some of these disagreements.

On the positive side, radiocarbon dating has gone a long way toward settling an old and bitter controversy relating to the correlation of the Maya chronology and the Christian calendar. The issue has revolved around the inclusion or the deletion of a 260-year cycle in establishing a synchronism between the two calendrical systems. The Spinden correlation includes this cycle; the Goodman-Thompson correlation does not. This means that a Maya date, according to Spinden, would be 260 years earlier than the latter system allows. Kulp, Feely, and Tryon (1951, p. 566) released a radiocarbon date of 481 A. D. ± 120 for a wooden lintel from Tikal, Guatemala, bearing the Maya date of 9.15.10.0.0. According to the Goodman-Thompson correlation this date would be 741 A. D. and by the Spinden correlation the date would be 481 A. D. Considering the experimental errors in making various calculations, this matching of results was truly phenomenal. Libby (1954, pp. 35–37), in testing the limits of sensitivity of the carbon 14 method, analyzed two additional, but separate, wood samples from Tikal, each from lintels bearing the 9.15. 10.0.0. Maya date. The weighted average for the two samples was 1503 ± 110 years or 451 A. D. ± 110, providing convincing corroboration for the earlier date and the correctness of the Spinden correlation.

Selecting a few more sample dates from Libby's latest list (1954) will suffice to show the range and bearing on problems of historical reconstruction: Miraflores Phase (Pre-Classic) Kaminaljuyu, Guatemala, 3142 ± 240, roughly coeval with the early or middle Archaic Period of Tlatilco, Valley of Mexico at 3407 ± 250 (Libby, 1952, p. 90); dates of 2377 ± 150 and 2780 ± 410 (Libby, 1954, p. 21) from the Toepfner Mound, Ohio, returning the Adena culture to an earlier chronological position than Hopewell as is borne out by stratigraphy but inexplicably reversed by the radiocarbon results published in 1952 (Libby, 1952, p. 78). Charcoal associated directly with ochre used in executing Bushman Cave paintings in Southwest Africa has yielded a date of 3368 ± 200 (Libby, 1954, p. 41). This is regarded by Professor H. Breuil as the first direct indication of the age of the frescoes in Phillip Cave, near Ameib, an important step in the chronological ordering of Bushman art styles. In the Near East, radiocarbon measurements are bringing into focus one of man's historic achievements, the founding of villages based on a food-producing economy. Jarmo, in Iraq, the earliest trace of such a village, has produced materials from the same spot recording two somewhat divergent but nevertheless revealing dates of 5266 ± 450 (Libby, 1954, p. 4) and 6707 ± 320 (Libby, 1952, p. 71).

As a final entry in this hurried sampling of radiocarbon results, note is made of the remarkably early dates for the Old Copper Culture of Wisconsin. Heretofore, the Old Copper industry lacked clearcut cultural affiliations, but it was suspected sometime ago by McKern (1942) of being of the Archaic horizon in the upper Great Lakes area and of pre-dating the Woodland cultures. Recent excavations (Ritzenthaler, 1954) the Milwaukee Public Museum in Oconto, Wisconsin, have added knowledge of burial practices, of a chipped stone industry, and of work in antler, bone, and shell as associates of the copper tools to give substance to the complex. Charcoal associated with burials of the Oconto cemetery has given dates of 5600 ± 400 and 7510 ± 340 (Libby, 1954, pp. 33–34). Once again a dating discrepancy points up the need for studies directed toward determining why these differences in counts occur in samples from the same source. Ritzenthaler believes that if the differential of nearly 2,000 years is due to contamination, the older date is the more reliable. Yet, it was made clear at the Radiocarbon Conference in Andover, Massachusetts (October, 1954), that contamination may be by dead carbon as well as by new carbon, and that the oldest date in a series is not *ipso facto* necessarily the more correct. However this may eventually be resolved, the evidence does suggest that the non-pottery Old Copper Culture was indeed old, and that the dates are the earliest we now have for man in northeastern America. Beyond this is the fact that the bearers of this culture were among the oldest metal users in the world, based on the fabrication of virgin copper rather than on smelting and ore reduction.

ECOLOGY AND ECONOMY

We have seen renewed attention given recently to the fundamental relationship between man and his physical environment. Along with cultural diffusion and evolution, knowledge of the ecological dimension, including climate, physiography, resources, food supply, and disease (Bates, 1953, p. 704) is vital in explaining the different patternings of cultures through time. This has come about naturally as a product of the swelling reservoir of archeological and other anthropological data, improved chronological controls, and from the greatly increased knowledge of past climates.

A provocative attempt at a cultural-environmental analysis on the regional level for the Indian populations of the Central Plains has been made by Wedel (1953). He sees indications that climatic fluctuations, ranging from rainfall conditions favorable to agriculture to droughts detrimental to agriculture, have been influential in determining spread of populations with different economies. He states, "It is abundantly clear that the climatic variations which characterize the region spatially from east to west also have their counterparts in fluctuations through time. In the perspective of archeology it appears that the native subsistence economies also were confronted with the need for readjustment from time to time" (Wedel, 1953, p. 499).

A work of broader scope but still holding to the ecological viewpoint is Clark's *Prehistoric Europe: The Economic Basis* (1952). Professor Clark believes that culture, to survive, must maintain some semblance of equilibrium with its environment. Knowledge of ecological stages and zones through time is therefore essential to an understanding of cultural phenomena, of the rise and fall of economies, settlement types, trade, and transportation. It is worth echoing Birket-Smith's query (1953, p. 433): "Is it too much to hope that before long, our knowledge of pre-Columbian North America may be sufficiently advanced for a treatment along similar lines. . . ?"

The environmental factor is seen again in two significant works dealing with agricultural origins in the Old and New Worlds. Braidwood (1952, p. 11), for example, proposes that the earliest food-producing villages of the Near East were established in the grassy uplands flanking the Fertile Crescent rather than along the streams within it. This is based on an impressive correlation of the rainfall patterns and the distribution of the major sites of the terminal food-gathering and of the oldest food-producing economies. Albright (1954) contests this point of view, however, arguing that early cultivation would more naturally be associated with streams and springs where domestic and irrigation water was constantly available.

The second work which merits attention presents a set of hypotheses on the origin and diffusion of cultivated plants and domesticated animals. Sauer (1952) believes that two patterns of agriculture are discernible for both the Old and the New Worlds. The earliest form, originating possibly in the wooded areas of southeastern Asia, was based on root and tuber crops. He recognizes a similar early pattern for the New World, centered in Colombia and Venezuela. Both of these widely dispersed centers he regards as "environmentally divergent developments" of a single cultivating system. Seed agriculture was historically later. For the Old World, its centers were North China, from the eastern Mediterranean to western India, and Ethiopia. The New World center was most likely the Mexican-Central American frontier-area, and in both hemispheres the initial plantings were in wooded areas. The contrasting points of view given by Braidwood, Albright, and Sauer as to the natural environment which encouraged agricultural beginnings might be more disturbing if it were clearly demonstrated that this momentous step could only have been made in one type of natural setting.

Climate, as a determinant in the peopling of the New World, has also come in for review and analysis (Mather, 1954), an approach which is not without interest to the archeologist. Mather has considered such factors as climate of the Alaskan-Siberian region today, its role in the reconstruction of past climates, the effects of climatic stress on the culture of primitive peoples, and physiological problems related to heat loss, due to temperature and wind, from the human body with different amounts of clothing. The conclusions are still somewhat indecisive, but it is suggested that in migrations since the last glacial age, the people either had adequate clothing, or that they survived the winter cold by staying in warm shelters save for short excursions to gather food. The Fuegians are cited as a primitive group who either entered this hemisphere better equipped as to clothing and housing than they are today, or arrived during a period of mild climate ". . . since or perhaps before the last great glacial advance" (p. 321). Perhaps the most interesting outgrowth of Mather's study is the suggestion that the initial migrations had a greater antiquity than the archeological evidence now indicates.

Studies in southwestern Asia have been bringing us ever closer to the points of where and when village communities first emerged in the world. This step, with all of its social and political implications and presaging modern city life, is linked with man's economic shift from food-gathering to food-producing. A recent synthesis (Braidwood and Braidwood, 1953) of the primary archeological data of the Middle East examines the problem in terms of three eras: (a) the terminal era of the food gathering stage, (b) the era of incipient agriculture and animal domestication, and (c) the era of village-farming efficiency. The authors admit that data in the first two eras, except for Palestine, southern Syria, and Lebanon, are lacking, but they find this taxonomic approach far more satisfactory for organizing the information than by means of less definitive terms such as "Mesolithic" and "Neolithic." Era endings are difficult to establish because there is no proof that similar economies in all parts of southwestern Asia were chronologically equivalent.

The terminal era begins hazily with the appearance of microliths in blade tool industries, selected in default of better technological or geochronological events. The second era is the most difficult to characterize due mainly to the lack of well-excavated and thoroughly analyzed materials. Evidences of incipient food production but without village settlements constitute the basis for the stage. Geographically, it is the least well represented of the three, and it is pointed out (p. 287) that the delineation of the beginnings of agriculture and animal domestication is one of the major challenges in Middle Eastern archeology. The last of the three eras, village-farming, is the clearest of all, the evidence derived chiefly from the great mounds. The established village, or the appearance of stable architecture, marks the beginning of the era, and it closes with the Halafian phase. The well-publicized site of Jarmo in the Tigris drainage, with radiocarbon dates of B. C. 4758 ± 320, 4654 ± 330, and 4743 ± 360 (Braidwood and Braidwood, 1953, p. 308), stands out as the type station. The Braidwoods are convinced, though they readily admit (p. 310) the case is not yet proven, that ". . . answers to questions as to how and why food production came about, are to be found within the time range and within the subareas . . ." lying between Palestine and the Zagros uplands. This they call the "nuclear" Middle East.

Two other significant contributions to Old World prehistory must be included here though there are doubtless numerous others which have escaped the writer's attention. The first of these, *Relative Chronologies in Old World Archeology* (Ehrich, 1954), is a compendium of papers, historically oriented to specific regional levels and problems. The valuable service this work renders is the integration of dating systems ranging from Central Europe eastward to China, proceeding through more or less contiguous areas. The interlocking of sequences is done on a relative basis because too many disagreements as to fixed dates exist to permit absolute chronological ranking. The effort emerges therefore as a working hypothesis, to be corrected and amplified as new data appear, and as a base for examining problems of cultural dynamics.

The second work, Childe's *New Light on the Most Ancient East* (1953) is a restatement of his earlier synthesis of the rise of civilization between the Nile and the Indus. Through a combined historical-functional approach, Childe sees the civilized societies developing from their primitive precursors in two stages, termed the "neolithic" and "urban" revolutions, each with varying technological and social effects. This concept, first stated nearly two decades ago, is now widely known and needs no further mention here. But the fact that the restatement of it remains essentially the same—chiefly an incorporation of new findings—after eighteen years indicates a soundness in the original formulation.

Beyond the basic question of agricultural origins there arise such queries as to when, how, and to what areas the new economy diffused, and how it was adapted in regions adverse and inhospitable to farming. To what extent were climate changes or cultural factors instrumental in determining its spread? Excavations in Sostelid, Norway, by Hagen (1953) are used as the point of departure for a comprehensive survey of Iron Age farming in northern Europe and Scandinavia. Generally, it has been held that climatic deterioration from sub-boreal to sub-atlantic conditions favored increased farming activity as an end product of a series of consequences, beginning with the necessity of sheltering the cattle during the winter, hence leading to more permanent villages. Hagen does not subscribe to this thesis, but believes that cultural influences from the south were the cause of intensified farming. Such differences of opinion stimulate the search for the subtle evidences left for us and are certain to lead to a more systematic approach to understanding the related technical and social changes associated with the "neolithic revolution." To a distant observer, it appears that the question of the transition from food gathering to food producing has been attacked far more vigorously and with more direction by Old World scholars than by those in the New World.

While on the subject of food-producing communities, this appears to be a suitable place to refer to some of the newest findings related to maize, or corn, the food plant that built American civilizations. A succession of discoveries has gone far to erase some of the earlier disputed points concerning both the origin and the age of this plant, and the botanic and archeologic evidence have combined to say something about its domestication by American Indians. These points are reviewed briefly in order: (1) Fossil corn pollen, recovered in 1953 at a depth of 200 feet in the lake clays in the Valley of Mexico, is believed to antedate the earliest evidence of agriculture and of man himself in this hemisphere. On the basis of the presently accepted glacial chronology, these pollen grains are in the order of 60,000 years old. Their age is regarded by botanists as proof of corn's American origin and that it has undergone less extreme evolutionary development than has been thought heretofore. (2) Teosinte, a Mexican grass, clearly has been ruled out as the plant from which corn descended, although teosinte was an important contributor to its recent evolution. Laboratory experiments by Dr. Paul C. Mangelsdorf of Harvard University have demonstrated that hybridization of corn and teosinte increases the mutation rate of the former, leading to greater variability and making it more susceptible to human selection. Furthermore, these laboratory experiments produced synthetic types which closely resemble in the cob some primitive archeological specimens of teosinte-contaminated corn. The discovery of "pure" corn in deposits rated as older than those producing the contaminated variety, as at Bat Cave in New Mexico dated by radiocarbon at from 3000 to 3900 B. C., has prompted Dr. Mangelsdorf to say, "This . . . proves beyond a reasonable doubt the ancestor of corn was corn. . . ." (3) The primitive Bat Cave corn and the cobs from La Perra Cave, Tamaulipas, Mexico, possibly nearest to the transition of the plant from a wild to a domesticated status, differ in several botanical characteristics. This, the botanists believe, means that the two types were separately domesticated from regionally distinct races of wild corn. Archeologists may find this idea of multiple domestication of different races of wild corn difficult to accept; yet, if such was the case, some of the dating discrepancies in the present evidence and the varietal proliferation would be explained. (The foregoing data was taken from a formal release of the Harvard University News Service, February 28, 1954.)

One needs only to read a book like Weatherwax's *Indian Corn in Old America* (1954) to realize that many debatable topics, beginning with the botanical ancestry of the corn plant, still exist. This book, while it may not fall strictly within the scope of the present review, should nevertheless be included in the archeologist's reading agenda.

THE ARCTIC AND EARLY MAN

The student of prehistory knows well that new finds are continually demanding revised frames of reference and that these shifts affect not only our ideas about regions, but that they may be continental in scope. Notable in this connection is the Arctic evidence of a chain of sites, roughly distributed around the Arctic Circle, exhibiting a lithic complex with a Paleolithic-Mesolithic stamp. The Cape Denbigh site (Giddings, 1951) on the northern shore of Bering Sea may be regarded as the type station. Giddings (1954) sees the evidence as pointing to the existence of a hunting culture widely spread latitudinally in the Polar regions near the northern limits of the tree-line, before man moved southward in America. He regards the sites of these people as more closely related to each other culturally than to the sites distributed longitudinally along the presumed migration routes followed by the original migrants to the New World. This leads Giddings (1954, p. 88) to voice extreme skepticism of the long-standing view of migratory hordes and to suggest that Early Americans filtered southward from the well-established Arctic populations, ". . . drawing at first for their changing culture on circumpolar ideas."

Relationships of the Cape Denbigh Flint Complex with the late Eskimo on the one hand, and Folsom and Yuma on the other, have been noted. If correct, this interpretation demands the view that Eskimo and Early Man origins are parts of a single problem (Collins, 1953, p. 202). It restricts, furthermore, our initial efforts at establishing relationships, say of Folsom-Yuma, to a New World phenomenon, rather than to the harder-to-prove Asiatic connections.

As noted above, a wide lateral spread and certain uniformity of implement characterizes the early Arctic stone industry. The hypothesis that southerly filterings from this base accounted for early cultures in the middle and southern parts of the American continent might well include, as one of its parts, that a similar lateral uniformity to the south should exist. A test of this idea can be made by examining the Clovis complex, or Llano Man, following Sellard's 1952 designation.

The lithic materials designated as the Clovis complex were originally discovered in New Mexico in the 1930's. Both geographic extent, including Colorado, Nebraska, and Texas, and an early chronologic position which is anterior to Folsom were ultimately established. New findings of the past few years have extended the areal distribution to Naco (Haury, Antevs, and Lance, 1953) in southern Arizona and as far east as New England at Ipswich (Byers, 1954). In the Plains and the Southwest at least, it is clear that one of the prime targets of Llano Man's characteristically fluted projectile points was the mammoth. Distributionally, Clovis materials or Clovis-like materials extended in a wide band from the western states to the eastern seaboard, not all of course, anchored chronologically. By type, about the same degree of uniformity for Clovis appears to exist, as has been pointed out for the widely spread Arctic sites.

In a broad sense, two interpretations are possible to account for the wide similarity in the Clovis pattern: first, a predominantly east-west spread from some intermediate center, following the stylistic stabilization of the key element in the complex, the Clovis fluted point; and second, that filtering moved southward over a broad front from an equally wide-spread base in the Arctic. Sufficient specific data of regional complexes, of time differences or equivalences, do not yet exist to test this idea, but it holds tantalizing possibilities.

In spite of the links which have been suggested between the Denbigh Flint Comlex and Folsom-Yuma, and the finding of Folsom and Yuma projectile points in interior Alaska (Collins, 1953, p. 199), the Arctic has not yet produced any dated remains comparable in age to those of the western United States. The Denbigh microlithic assemblage does not impress one as being the kind that would logically go with a big-game hunting activity, and it may well be that the complex is a survival from an earlier period which ought to show even more pronounced resemblances to the weapons of the big-game hunters to the south.

Apart from all these considerations, the Denbigh industry is important in another sense. This is the presence of burins (Giddings, 1951, p. 201), one of the three main categories of tools making up the assemblage. Burins heretofore have been known only from Old World cultures of upper Paleolithic and Mesolithic horizons. This extension of an Old World specialized stone-working technique into an early American culture is of interest in itself, but in the New World the tool ceases to have the specific dating value it has in western Europe. Collins (1953, p. 201) notes this survival in eastern Eurasian Neolithic and among the Dorset Eskimo of the Arctic ". . . probably within the past two thousand years."

On a late time level, the circumpolar distribution of Stone Age elements has been noted by Gjessing (1953, pp. 131–136) as indicative of a ". . . continuously flowing stream of influences from Asia to America . . . (and) a second stream from Asia penetrating westward to the Norwegian Atlantic Coast, and partly even to the British Isles." One is tempted to look upon this as *prima facie* evidence supporting Giddings' theory of early latitudinal diffusion, governed basically by ecological factors.

The foregoing discussion has already introduced the topic of Early Man in America which must command additional attention in this resumé. The cooperation of an increasing number of geologists, refinements in analysis of recent geological deposits, new discoveries, and the influence of radiocarbon dating have stimulated this aspect of Americanist studies. At the same time, however, the progress in the past two years toward clarifying questions pertaining to the time and manner of peopling of the New World, and to the conditions in both Asia and Alaska during the late Pleistocene has been negligible. Some new stations, mostly well in the interior, have been reported[2] which by themselves extend our knowledge of traits or complex distributions.

It is certain that the newest findings of radiocarbon dating will effect changes in the thinking about the time factor of terminal Pleistocene events (e.g. 11,000 ± years ago date for the Mankato). Other than the publication of specimen dates, no real reappraisal has yet been made available drawing out the significance of these, but it appears that a shortening of recent glacial chronology will be in order. To what extent such a revision will alter changes in concepts related to early man remains to be seen.

For those who seek a quick view of early man, at least two useful summaries recently have been published (Sellards, 1952; Wormington, 1953). This much is becoming increasingly apparent: Before broad generalizations can be made about early American populations, the record will become infinitely more complicated due to taxonomic proliferation as more and more regional variations in early lithic complexes are recognized. The relationships of these complexes, cultural and temporal, will remain the focal point of interest for some time to come. Nonetheless, the fact that diversity exists in the early remains should raise questions anew regarding the nature of the sources of migrations, of the effects of regional environments and changing climate on societies, of disparate rates of cultural change, and, indeed, of the time of the initial peopling. Does the present weight of the radiocarbon and geological dating of less than a score of millenia really allow sufficient time for all the variations we see?

Sellards (1952) has designated two levels of hunting societies in the Plains: Llano Man (after Llano Estacado, or Staked Plains of Texas and New Mexico), who hunted the elephant, and Folsom Man, the bison hunter. These appear to stand in an A-B temporal and cultural relationship in the order stated. At the moment it seems that these complexes, marked by some readily recognized traits, may be taken as the platform from which the historical and functional framework can be erected, both before and after the 9,000 to 12,000 year age now assigned to them.

---

[2] Byers, D. S., 1954; Haury, E. W., Antevs, E., and Lance, J. F., 1953; Martinez del Rio, P., 1952; Aveleyra Arroyo de Anda, L., and Maldonado-Koerdell, M., 1953.

The recovery of the skeletal remains of early man in the Western Hemisphere has been disappointing, not only in the number of discoveries, but also in their reliability. Disputes, focused chiefly on problems of antiquity, surround each one. The most recent find at Midland, Texas (Anonymous, 1954), of an incomplete human calvarium and a few miscellaneous bones, is looked upon hopefully as an exception. The human bones, as well as a number of fossil animal bones, were taken from a stratum below and different in character from the immediately overlying one in which artifacts of the Folsom horizon occurred. Geological estimates place the age at 12,000 to 20,000 years and fluorine examination proves both human and animal bones to be of the same age. "Midland Man" and Llano Man, the latter inferred from lithic and bone artifacts, will doubtless prove to be one and the same. The Midland bones in no way change the prevailing opinion that the early occupants of the New World were *Homo sapiens*.

The consensus, based on all the methods of dating now available to us, holds that the oldest evidences of man in the Western Hemisphere do not go much beyond 20,000 years, and that early migrations from Asia entered the North American continent via the Bering Strait route. It is also held that the history of the migrations is closely linked with glacial history. At best it appears that the earliest crossing of the strait was made just before or during the onset of the Mankato substage of the Wisconsin ice period. Interglacial and post-glacial penetrations would not have met the obstacle presented by great ice fields. An extreme view of the time of man's arrival in America has been given by Carter (1952; 1954) who believes he has evidence in California in support of man of third interglacial age. The data Carter uses are based on studies of four stations in the San Diego area in which stones believed to be artifacts occur in terrace- and valley-fill formations of decipherable geologic antiquity. The presumed tools consist of bifaced cores, anvil cores, plano-convex stones and flakes, some of which show trimming. Percussion flaking only is indicated. Most archeologists have viewed these stones with considerable skepticism, believing that they do not prove clearly the purposeful work of man in shaping tools. Criticism also has centered on the scarcity of the objects and the lack of other evidences of man's presence. In 1954 new evidence was adduced from the Texas Street station in San Diego which bears on the latter point in particular. Tool frequencies (140 from the above locale) appear to be adequate, but are still low when judged by European Paleolithic and New World "mesolithic" standards. In interbedded fanglomerates, Carter (1954, p. 167) reports ". . . hearths with flecks of charcoal, a high percentage of fire-broken rock, numerous artifacts, and bone and shell representing food refuse." In the valley fill, fire-cracked stones are noted in extensive accumulations up to 100 feet in diameter and several feet thick. Clearly, these present important and perhaps decisive aspects of the problem. Selectivity in materials is also noted: most of the tools are of quartzite, while ninety per cent of the heat-fractured stone is porphyry.

Needless to say, Carter's work has tossed a challenging problem into the archeological hopper. It will be admitted readily that there is no valid theoretical reason why man could not have been present in the Western Hemisphere as early as the third interglacial; but coupled with claims of high antiquity, there is a feeling among the students that the burden of proof is directly proportional to the magnitude of the age. Carter's approach (1954, p. 167) to dating is through climatology, pedology, geomorphology, glaciology, and eustatic sea-level changes. As the first major step, the interpretation of the geological record needs to be corroborated by neutral observers. Next will be the evaluation of the presumed human evidence. The nature of the reported artifacts, as well as the other evidence, will assuredly produce a re-examination of what constitutes man's or nature's handiwork, and verbal skirmishes may be expected. If Carter's claims are ultimately accepted, extensive changes in the concepts of New World prehistory must follow.

A SAMPLING OF OTHER ADVANCES

The culture historian is in an enviable spot when existing populations are demonstrably connected with the archeological remains under study. Investigators have been conscious of this for many decades, but recent works, especially in North America, display revived attention to the values of ethnography and written documents, not only as a means of establishing continuities, but also in assessing cultural processes, such as diffusion and acculturation. Hawkes (1954) has drawn useful distinctions in the connection between "text-free" archeology—the dependence on experimental classification, and the "text-aided" archeology—that dependent on documentary help. What is said below about the Southwest as a test area might be said too in varying degrees about other parts of the Americas.

Reed, in a series of papers over the past dozen years (summarized in 1954), has shown how the modern Pueblo Indians, in the face of enemy attacks, Spanish domination, missionary efforts, and the impact of modern technology, have kept the essentials of their old social system, community organization, and religion. Along more specific processual lines is Spicer's "Spanish-Indian Acculturation in the Southwest (1954)." Although without reference as such to archeology, this paper holds useful leads for the excavator who works in ruins of post-Spanish times in which the traces of adjustment and reorientation may appear.

Most advances in erecting the archeo-historical bridge will come through intensive local studies. Smith's monumental analysis (1952) of kiva murals in the old Hopi towns of Awatovi and Kawaika-a is one of these. The detailed analysis of art styles and component elements through time, as seen in a phenomenal collection of mural paintings, establishes a new foundation for the comprehension of modern pueblo art and religion.

The compact nature of pueblo settlement favors the study of the Spanish contact period infinitely more than do the architecturally dispersed villages of the desert tribes. Yet, substantial progress has been made here, too, in spanning what has long been a troublesome blind spot between 1400 and 1700. Di Peso (1953) has brought into full play a blend of ethnographic, documentary, and archeologic data arising from the excavation of historic Quiburi in the San Pedro valley, Arizona, which presents an exceptionally detailed picture of a little known tribe, the Sobaipuri.

The process of diffusion on an inter-hemispherical basis has undergone recurrent examination. The present cycle has been stimulated in part perhaps by Heyerdahl's crossing of the Pacific from Peru to Polynesia on a balsa raft and the books (1950, 1952) resulting from this venture. Early attempts at establishing Asiatic-American cultural relationships were mostly in the nature of matching traits without being overly critical of geographic locality, the clustering of elements, and chronological problems. The result is that many Americanists have avoided involvement in the question. Paradoxically, most students will agree on the Asiatic source for *Homo* in America, but the accordance ceases on what cultural equipment was brought in or was subsequently transmitted in either direction.

An attack on this general question is represented by a series of papers (Smith, 1953) which start farther down—at the "grass root" level--than have most efforts. The topics range through problems of prehistory within Asia itself, the cultural subdivisions of that continent, considerations of Aleutian and Alaskan archeology, questions of ethnographic and social import, botanical evidence, and a cultural complex analysis. It seems worthwhile noting especially the credible and sought-for link that the Norton ceramic complex of the western border of Alaska erects between the pottery of eastern Asia and eastern North America (Griffin, 1953); the reassertion of the value of botanical evidence as an indicator of trans-Pacific diffusion by man (Carter, 1953); and finally, Ekholm's hypothesis (1953) of a focus of Asiatic influences on the western borders of the Maya area. An impressive array of analogies, called Complex A, has been brought together, including the trefoil arch, sanctuary within a temple, sacred tree or cross, tiger thrones, lotus staff, lotus thrones, lotus panels, conch shell with plant, court scenes, colonnette decoration, gallery structure, Atlantean figures, phallic cult, monster doorway, Chac mool, serpent columns, seated lions or tigers, diving god, serpent deities, sun disc, copper bells, and Vishnu figure. Ekholm clearly points out that these elements are not localized in a single Asiatic center, but on the American side there is some geographic as well as chronologic cohesiveness. As is always the case with comparisons of this kind, more queries and theoretical points are raised than answered. Convincing solutions to most of these may never be known, but advances in techniques, in specialized data, in linguistics, and physical anthropology, will dispel in time some of the haze surrounding this venerable anthropological problem.

Submarine archeology has brought a new meaining to the word "dig." The increasingly successful efforts to reclaim the human record from the sea are the direct result of the mastery of technical problems related to working in an environment strange to all but a handful of archeologists. It is a fantastic world indeed when the archeologist may direct the work of divers on the sea bed from the deck of a ship via the television camera and a submerged loudspeaker.

Doilé (1952) reviews much of the ancient evidence recovered from the sea in the Mediterranean area during the past forty years, ranging from the old wreck of a cargo ship off Mahdia, Tunisia, to harbor installations in the loading ports of Greco-Roman times. Brushing aside the glamour associated with these undersea activities, the contributions they make to ancient commerce and, through this, to economic and navigational history cannot be denied. On a more specific level, the vast quantities of contemporary materials recovered, such such as amphorae and Campanian ware, from the 2200-year old Greek ship near Marseille (Costeau, 1954), has led to a new understanding of early developments in mass-production techniques and, through this, to new concepts of ancient society in a way that has not been possible by the study of the scattered remains of broken dishes buried in the earth. So far, most undersea archeology spans little more than the last 2000 years and has been quite limited geographically. It will be interesting to observe extensions in both of these dimensions.

An outstanding archeological achievement of 1953, the "Everest of Greek archeology," was the decipherment of the Minoan Script known as Linear B (Barnett, 1953; Ventris, 1954). Inscribed clay tablets, first found by Sir Arthur Evans in 1896 in the ruins of the palace of Knossus have, until now, defied all attempts at translation. The application of modern cryptanalytic methods by Michael Ventris, an architect, led to this brilliant accomplishment. To everyone's surprise, the language appears to be not Minoan but an early dialect of Greek ". . . at a stage seven hundred years older than the earliest classical Greek . . ." which dates from about 750 B. C. (Ventris, 1954, p. 17). Barnett (1953) notes that these tablets, if Greek, constitute the earliest contemporary record of any Indo-European language. Some Linear B tablets are not decipherable, and it is suggested that these are in the Minoan language which itself may now be decoded by working back from Linear B "Greek" as the starting point.

The far-reaching effects of this triumph of epigraphy is the re-interpretation of Greek history at about the time of the sack of Knossus in 1400 B. C. The mainland, instead of having been dominated by Cretan influence until 1400 B. C., must already have been independent, with Knossus under Achaean rule before its destruction. In the words of Barnett (1953) ". . .

the most gratifying fact is that Ventris has at last rung up the iron curtain which for long cut Greek archeology into two apparently disconnected halves—a Bronze Age Mycenean, but virtually pre-Greek, and a Greek Iron Age. They are now seen to be all one." An incidental, though not irrelevant, observation is the fact that the decipherment of this old script by an architect underscores the importance of the contributions the non-professionals can make and have made to archeology.

A few books should be singled out as landmarks of the 1952–54 period. Though several of these are largely descriptive, they nonetheless mark the step that precedes theoretical and interpretive considerations. Schmidt's monumental *Persepolis* (1953), for example, illustrates again the splendor of ancient Iran and the wide gulf that separates the general level of societal achievement from Jarmo to the time of Darius in the Near East. That little more than 4000 years of time separates these two manifestations, dramatically points out the explosive nature of cultural evolution following the establishment of village life.

Another volume of note (Griffin, 1952) presents, by means of a series of papers, summaries and interpretations of the early cultures east of the Rocky Mountains. All but one of the twenty-eight chapters were prepared by former students and in honor of Professor Fay-Cooper Cole, Chairman Emeritus of the Department of Anthropology, The University of Chicago. Their orientation is areal, and they include highly useful illustrations of the more important cultural traits of anthropological units at different times. The result is a pictorial inventory, which, along with the text, comprises a compact source for information on archeology of the eastern United States available heretofore only in scattered form. But actually, the book contains much more than this, and is spearheaded by Eggan's contribution (1952, pp. 35–45), "The Ethnological Cultures and Their Archeological Background." The lesson in this is that archeological interpretations can be carried well beyond the narrow limits of the customary historically slanted studies by drawing from and basing inferences upon the findings of ethnology and social anthropology.

Finally, recognition must be made of two related volumes, *Anthropology Today* (Kroeber and others, 1953) and *An Appraisal of Anthropology Today* (Tax *et al.*, 1953), in which a substantial percentage of the more than 1300 pages bear directly or indirectly on archeology. As a stock-taking endeavor, the contributed papers may have fallen short in some respects, e.g., no archeologists participated in the larger sections on process and application (Taylor, 1954). Nevertheless, a reading of these pages cannot fail to provide one with the kind of information—on theory, methods, and interpretations—that would be gained otherwise only by exhaustive and exhausting bibliographic work.

REFERENCES

ALBRIGHT, W. F.
1954 Review of Braidwood, R. J., *The Near East and the Foundations for Civilization*, in *American Anthropologist*, Vol. 56, No. 1, pp. 143–144.

ANONYMOUS
1954 "Ancient Midland Skull Discovery," *El Palacio*, Vol. 61, No. 9, pp. 306–307. Santa Fe, New Mexico.

ANTEVS, E.
1953 "Geochronology of the Deglacial and Neothermal Ages," *The Journal of Geology*, Vol. 61, No. 3, pp. 195–230.

AVELEYRA ARROYO DE ANDA, L. and MALDONADO-KOERDELL, M.
1953 "Association of Artifacts with Mammoth in the Valley of Mexico," *American Antiquity*, Vol. XVIII, No. 4, pp. 332–340.

BARNETT, R. D.
1953 "The Minoan Script: A Triumph of Decipherment," *The Manchester Guardian Weekly*, Vol. 69, No. 16, October 15, 1953. Manchester, England.

Bates, M.

1953 "Human Ecology," pp. 700–713 in Kroeber, A. L. and others, *Anthropology Today, An Encyclopedic Inventory*. Chicago: University of Chicago Press. 966 pp.

Bennett, W. C.

1948 "The Peruvian Co-tradition," pp. 1–7 in Bennett, W. C. (assembler), *A Reappraisal of Peruvian Archaeology* (Memoir 4, Society for American Archaeology). 128 pp.

Birket-Smith, K.

1953 Review of Clark, J. G. D., *Prehistoric Europe: The Economic Basis*, in *American Anthropologist*, Vol. 55, No. 3, pp. 432–433.

Braidwood, R. J.

1952 *The Near East and the Foundations for Civilization* (Condon Lectures). Eugene: Oregon State System of Higher Education. 45 pp.

Braidwood, R. J. and L.

1953 "The Earliest Village Communities of Southwestern Asia," *Journal of World History*, Vol. 1, No. 2, pp. 278–311. Paris: Commission Internationale pour une Histoire du Developpement Scientific et Culturel de l'Humanité.

Byers, D. S.

1954 "Bull Brook—A Fluted Point Site in Ipswich, Massachusetts," *American Antiquity*, Vol. XIX, No. 4, pp. 343–351.

Carter, G. F.

1952 "Interglacial Artifacts from the San Diego Area," *Southwestern Journal of Anthropology*, Vol. 8, No. 4, pp. 444–456.

1953 "Plants Across the Pacific," pp. 62–71 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). Salt Lake City, Utah: University of Utah. 97 pp.

1954 "An Interglacial Site at San Diego, California," *The Masterkey*, Vol. XXVIII, No. 5, pp. 165–174. Los Angeles.

Childe, V. G.

1953 *New Light on the Most Ancient East*. New York: Frederick A. Praeger. 255 pp.

Clark, J. G. D.

1952 *Prehistoric Europe: The Economic Basis*. New York: Philosophical Library. 349 pp.

Collins, H. B.

1953 "Radiocarbon Dating in the Arctic," *American Antiquity*, Vol. XVIII, No. 3, pp. 197–203.

Cousteau, Jacques-Yves

1954 "Fish Men Discover a 2,200-year-old Greek Ship," *The National Geographic Magazine*, Vol. CV, No. 1, pp. 1–36.

Daifuku, H.

1952 "A New Conceptual Scheme for Prehistoric Cultures in the Southwestern United States," *American Anthropologist*, Vol. 54, No. 2, Pt. 1, pp. 191–200.

Di Peso, C. C.

1953 *The Sobaipuri Indians of the Upper San Pedro River Valley, Southeastern Arizona*, No. 6, The Amerind Foundation, Inc., Dragoon, Arizona. 285 pp.

Doilé, P.

1952 *4,000 Years Under the Sea*. New York: Julian Messner, Inc. 237 pp.

Eggan, F.

1952 "The Ethnological Cultures and Their Archeological Backgrounds," pp. 35–45 in Griffin, J. B. (ed.), *Archeology of Eastern United States*. Chicago: University of Chicago Press. 392 pp.

Ekholm, G. F.

1953 "A Possible Focus of Asiatic Influences in the Late Classic Cultures of Mesoamerica," pp. 72–89 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). Salt Lake City, Utah: University of Utah. 97 pp.

Ehrich, R. W. (ed.)

1954 *Relative Chronologies in Old World Archeology*. Chicago: University of Chicago Press. 154 pp.

FORD, J. A.
1952 "Measurement of Some Prehistoric Design Developments in the Southeastern States," *Anthropological Papers, American Museum of Natural History*, Vol. 44, Pt. 3, pp. 313–384.
1954a "The Type Concept Revisited," *American Anthropologist*, Vol. 56, No. 1, pp. 42–54.
1954b "Spaulding's Review of Ford," *American Anthropologist*, Vol. 56, No. 1, pp. 109–112.
GIDDINGS, J. L., JR.
1951 "The Denbigh Flint Complex," *American Antiquity*, Vol. XVI, No. 3, pp. 193–203.
1954 "Early Man in the Arctic," *Scientific American*, Vol. 190, No. 6, pp. 82–88.
GJESSING, G.
1953 "The Circumpolar Stone Age," *Antiquity*, Vol. XXVII, No. 107, pp. 131–136. Newbury, Berks., England.
GRIFFIN, J. B.
1953 "A Preliminary Statement on the Pottery from Cape Denbigh, Alaska," pp. 40–42 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). Salt Lake City, Utah: University of Utah. 97 pp.
GRIFFIN, J. B. (ed.)
1952 *Archeology of Eastern United States*. University of Chicago Press. 392 pp.
HAGEN, A.
1953 *Studier i Jernalderens Gårdssamfund* (Studies in the Farming Community of the Iron Age). Oslo: Universitetets Oldsaksamlings Skrifter, Bind IV. 309 pp.
HAURY, E. W., ANTEVS, E., and LANCE, J. F.
1953 "Artifacts with Mammoth Remains, Naco, Arizona," *American Antiquity*, Vol. XIX, No. 1, pp. 1–24.
HAWKES, C.
1954 "Archeological Theory and Method: Some Suggestions from the Old World," *American Anthropologist*, Vol. 56, No. 2, Pt. 1, pp. 155–168.
HEYERDAHL, T.
1950 "The Voyage of the Raft Kon-Tiki," *The Geographical Journal*, Vol. CXV, Nos. 1–3, pp. 20–41. London.
1952 *American Indians in the Pacific*. London: George Allen and Unwin, Ltd. 821 pp.
HIRSCH, D. I.
1954 "Glottochronology and Eskimo and Eskimo-Aleut Prehistory," *American Anthropologist*, Vol. 56, No. 5, Pt. 1, pp. 825–838.
KROEBER, A. L. and others
1953 *Anthropology Today: An Encyclopedic Inventory*. Chicago: University of Chicago Press. 966 pp.
KULP, J. L.; FEELY, H. W.; and TRYON, L. E.
1951 "Lamont Natural Radiocarbon Measurements," *Science*, Vol. 114, No. 2970, pp. 565–568.
LIBBY, W. F.
1952 *Radiocarbon Dating*. Chicago: University of Chicago Press. 124 pp.
1954 "Chicago Radiocarbon Dates V," *Science*, Vol. 120, November 5, pp. 733–742.
MARTIN, P. S. and RINALDO, J. B.
1951 "The Southwest Co-tradition," *Southwestern Journal of Anthropology*, Vol. 7, No. 3, pp. 215–219.
MARTÍNEZ DEL RÍO, P.
1952 "El Mamut de Santa Isabel Iztapan" (The Mammoth of Santa Isabel Iztapan), *Cuadernos Americanos*, Vol. 64, No. 4, pp. 149–170.
MATHER, J. R.
1954 "The Effect of Climate on the New World Migration of Primitive Man," *Southwestern Journal of Anthropology*, Vol. 10, No. 3, pp. 304–321.
MCKERN, W. C.
1942 "The First Settlers of Wisconsin," *Wisconsin Magazine of History*, Vol. 26, No. 2, pp. 153–169. Madison.
PHILLIPS, P. and WILLEY, G. R.
1953 "Method and Theory in American Archeology: An Operational Basis for Culture-Historical Integration," *American Anthropologist*, Vol. 55, No. 5, Pt. 1, pp. 615–633.

REED, E. K.
1954 "Transition to History in the Pueblo Southwest," *American Anthropologist,* Vol. 56, No. 4, Pt. 1, pp. 592–597.
RITZENTHALER, R. E.
1954 "The Significance of the Oconto Site in Wisconsin Archeology," *Transactions of the Wisconsin Academy of Science,* Fall, 1954.
ROUSE, I.
1953 "The Strategy of Culture History," pp. 56–76 in Kroeber, A. L. and others, *Anthropology Today, An Encyclopedic Inventory.* Chicago: University of Chicago Press. 966 pp.
SAUER, C. O.
1952 *Agricultural Origins and Dispersals.* New York: The American Geographical Society. 110 pp.
SCHMIDT, E. F.
1953 *Persepolis I. Structures, Reliefs, Inscriptions* (Oriental Institute Publications, Vol. LXVIII). Chicago: University of Chicago Press. 297 pp.
SELLARDS, E. H.
1952 *Early Man in America.* Austin: University of Texas Press. 211 pp.
SMITH, M. W. (ed.)
1953 *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). Supplement to *American Antiquity,* Vol. XVIII, No. 3, Pt. 2. 97 pp.
SMITH, W.
1952 *Kiva Mural Decorations at Awatovi and Kawaika-a, With a Survey of Other Wall Paintings in the Pueblo Southwest* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XXXVII). Cambridge. 363 pp.
SPAULDING, A. C.
1953a "Statistical Techniques for the Discovery of Artifact Types," *American Antiquity,* Vol. XVIII, No. 4, pp. 305–313.
1953b Review of Ford, J. A., "Measurements of Some Prehistoric Design Developments in the Southeastern States," *American Anthropologist,* Vol. 55, No. 4, pp. 588–591.
SPICER, E. H.
1954 "Spanish-Indian Acculturation in the Southwest," *American Anthropologist,* Vol. 56, No. 4, Pt. 1, pp. 663–678.
STEWARD, J. H.
1954 "Types of Types," *American Anthropologist,* Vol. 56, No. 1, pp. 54–57.
SWADESH, M.
1952 "Lexico-statistic Dating of Prehistoric Ethnic Contacts," *Proceedings of the American Philosophical Society,* Vol. 96, No. 4, pp. 452–463. Philadelphia.
SWADESH, M., *et al.*
1954 "Symposium: Time Depths of American Linguistic Groupings," *American Anthropologist,* Vol. 56, No. 3, pp. 361–377.
TAX, S.; EISELEY, L. C.; ROUSE, I.; and VOEGELIN, C. F. (eds.)
1954 *An Appraisal of Anthropology Today.* Chicago: University of Chicago Press. 395 pp.
TAYLOR, W. W.
1954 "Archeology" (from a collaborative review of *Anthropology Today,* 1953, and *An Appraisal of Anthropology Today,* 1953), *American Anthropologist,* Vol. 56, No. 3, pp. 480–483.
VENTRIS, M.
1954 "King Nestor's Four-Handled Cups," *Archaeology,* Vol. 7, No. 1, pp. 15–21. Brattleboro, Vt.
WEATHERWAX, P.
1954 *Indian Corn in Old America.* New York: The Macmillan Company. 253 pp.
WEDEL, W. R.
1953 "Some Aspects of Human Ecology in the Central Plains," *American Anthropologist,* Vol. 55, No. 4, pp. 499–514.
WHEAT, J. B.
1954 "Southwestern Cultural Interrelationships and the Question of Areal Co-tradition," *American Anthropologist,* Vol. 56, No. 4, Pt. 1, pp. 576–586.

WILLEY, G. R.

1953a "Archeological Theories and Interpretation: New World," pp. 361–385 in Kroeber, A. L. and others, *Anthropology Today, An Encyclopedic Inventory*. Chicago: The University of Chicago Press. 966 pp.

1953b "A Pattern of Diffusion–Acculturation," *Southwestern Journal of Anthropology*, Vol. 9, No. 4, pp. 369–384.

1953c *Prehistoric Settlement Patterns in the Virú Valley, Peru* (Bulletin 155, Bureau of American Ethnology). Washington, D. C.: Smithsonian Institution. 453 pp.

WORMINGTON, H. M.

1953 *Origins* (Instituto Panamericano de Geografía e Historia. Program of the History of America, I, 1. Publication No. 153). Mexico. 118 pp.

Chronology and Dating Processes

JAMES B. GRIFFIN

Dr. Griffin is Director of the Museum of Anthropology and Professor of Anthropology at the University of Michigan, Ann Arbor, Michigan. He was President for 1951-1952 and was Secretary for 1952–1954 of The Society for American Archaeology. Included among his principal publications are: The Fort Ancient Aspect, 1943; Archaeological Survey in the Lower Mississippi Alluvial Valley, 1940–1947, with Philip Phillips and James A. Ford, 1951; and Archeology of Eastern United States, editor and co-author, 1952.

CHRONOLOGY is of basic importance to any study of man's past, for the temporal framework of cultural events must be provided in order to assess adequately or interpret cultural change or stability. Because of the importance of chronology, one of the first efforts by archeologists in any area is to provide a reliable framework in which the past cultural events of that area can be placed.

An admirable survey of methods of obtaining chronology, by R. F. Heizer, was published in 1953 in *Anthropology Today* and offers a significant coverage of the literature up to 1952, when it was written. The third edition of Zeuner's *Dating the Past* appeared in 1953 and provides an excellent single-volume treatment of geochronology. With such aids as these, another statement after only two years may seem unnecessary, but perhaps attention may be drawn to a sufficient number of new papers to make the effort worth while. This will be particularly true in radiocarbon dating where considerable progress has been made in the establishment of additional laboratories and the improvement and variety of dating techniques.

The present paper will supply bibliographical references on some of the fields and areas included in Heizer's survey. His outline of time-reckoning methods is an excellent guide, which can be employed effectively in class presentations. Another approach to the organization of data on temporal placement was Oakley's grouping of types of dating into four levels each of relative and absolute dating (Oakley, 1953, pp. 43–56). Such concepts are of definite value in clearly indicating just what is being dated. Subsequent discussion of this paper indicated some disagreement as to the methods which provided absolute dates and those which provide relative dates (Tax *et al.*, eds., 1953, pp. 13–15). Absolute dates in most archeological areas are rather difficult to obtain and in one view would be equated with calendrical dates such as were expressed in the Maya calendar; or as are obtained by dated coins, by judicious interpretation of tree rings, or by a truly annual varve sequence connected at the upper end with an historic date. Radiocarbon dates in this view would be *estimated calendrical dates*, while relative dating would apply to most of the geophysical and chemical weathering changes recording the passage of time. Zeuner (1953, p. 110) has defined relative chronology for the Pleistocene as dating "by the succession of glacial and interglacial phases, and it relies mainly on alternating geological processes of deposition and destruction of deposits." The same authority refers to absolute chronology as "reliance on some kind of astronomical rhythm, namely the year in the late Glacial and Postglacial chronology and the perturbations of the earth's orbit in Pleistocene chronology." The definitions employed by Heizer (1953, p. 4) are somewhat different in that he seems to require for absolute chronology a degree of precision in years not required by Zeuner.

The explanation of the fluctuations in the climate of the Pleistocene and other glacial periods based on the work of Milankovitch and supported by Zeuner, has not been accepted by students of the cause of climatic change (Willett, 1953) and is regarded critically by some students of European prehistory (Tax *et al.*, eds., 1953, pp. 6-14).

RADIOCARBON DATING

At the moment all other dating processes are of somewhat lesser interest than radiocarbon dating. This method has been of extraordinary importance because it can be used for organic materials from all over the world, because it can reach well back into human and geological history some 50,000 years, and because results are not dependent on comparative assay on different items from a common source as in chemical dating. It has served as a crosscheck for varves, tree-ring dates, historical documents, and the Maya calendar. It has provided a time-scale for areas which formerly had only a relative chronology. In many cases the dating results have been such that they seem internally consistent and also can be integrated into a broader context with complete satisfaction. In other cases radiocarbon dates have not been in accord with structural position, have been otherwise inconsistent, or have not been accepted because of the slowness with which previous professional opinion can change.

The pioneer laboratory of Dr. W. F. Libby at The University of Chicago, which was initially supported by the Wenner-Gren Foundation, is now, we hope only temporarily, out of the radiocarbon dating field. There are, however, in both hemispheres, other laboratories under university or other auspices, which have been contributing not only to the imposing body of dated materials but also to improvements in the methods and techniques of radiocarbon dating.

At the University of Chicago, Dr. James R. Arnold is working on his development of the liquid scintillation method with which he expects to achieve measurements back to 55,000 years. A functioning liquid scintillator is in operation at the University of Winnipeg in Manitoba, Canada, where it was developed by Dr. R. W. Pringle and his associates under sponsorship from the Wenner-Gren Foundation. These methods have the advantage that they will be able to detect almost 100 per cent of the radiocarbon radiation and, by the considerable elimination of the background radiation, will increase the accuracy of the date—for average samples within ten years of the actual age. A third scintillation counter is at Los Alamos, New Mexico.

The University of Michigan Memorial Phoenix Project Radiocarbon Laboratory, at Ann Arbor under the direction of Dr. H. R. Crane, has shifted from using solid carbon to a CO_2 Geiger counter which is the only one of its type now operating. Dr. J. L. Kulp and his associates at Columbia University's Lamont Geological Observatory at Alpine, New Jersey, with four screen-wall Geiger counters modelled closely after Libby's initial development, have been the second most active group in producing dates for a wide variety of materials and purposes (Kulp *et al.*, 1952). Other institutions also adopted the screen-wall counter. Yale University (New Haven, Connecticut) has published initial results, indicating clearly their difficulties (Blau *et al.*, 1953). This group and the Lamont Observatory are now in the process of changing to an acetylene proportional counter of the type developed at the U. S. Geological Survey. The University of Pennsylvania's University Museum in Philadelphia is now actively dating materials, and a report on their activities has recently appeared (Ralph, 1955). The University of Copenhagen, Denmark, with a solid carbon counter has published a series of dates with a remarkable consistency (Anderson *et al.*, 1953).

The acetylene proportional counter developed by Dr. Hans Suess of the U. S. Geological Survey has produced a significant series of published dates (Suess, 1954b) with heavy emphasis on those of geological importance, including the oldest date yet announced by the radiocarbon method—34,000 ± 2,800 (or possibly older). This, of course, is measured in terms of years ago. The significance of this date for a North African Mousterian level and the accompanying cultural material will be discussed by the excavator, Dr. C. B. M. McBurney of Cambridge University, in his publication on the site. Another center which is building an acetylene proportional counter is Cambridge University, England. The University of Arizona (Tucson) is abandoning its effort to start a carbon black counter and will shift to one of the newer methods. The University of Colorado (Boulder), partly because of its geographical location, found operation of the screen-wall Geiger counter a difficult enterprise and probably will abandon it.

The carbon dioxide proportional counter which also produces results of greater sensitivity is in operation at the University of Groningen in Holland and at the Dominion Physical Laboratory, New Zealand. The work at this latter institution is under the direction of Dr. G. J. Fergusson (1955). He expects to date materials up to 45,000 years of age and has been in successful operation since July 1954, though he has not yet dated carbon materials in association with human occupation in New Zealand (Fergusson, 1953; Fergusson and Rafter, 1953). The Humble Oil Company has a laboratory with the carbon dioxide proportional counter, while the Magnolia Oil Company has developed a methane proportional counter, both for commercial research activities.

One of the initial reasons for the development of the various gas counters was to avoid contamination from airborne radioactivity from the atomic bomb tests. They have proved so superior that the eight-year-old solid carbon method is now outmoded. Dr. H. R. Crane, who has materially aided in the data for this section, has prepared Table 1, listing current techniques, institutions, and the advantages and disadvantages of various types of radiocarbon counters as they are now seen. He believes that much more experience will have to be gained before it will be possible to single out one of these methods as being the best. On the basis of the record for the past year or so, the palm for precision and consistency seems to lie with the acetylene proportional counter.

In September 1954, the Carbon-14 Dating Laboratory of Copenhagen called a meeting of the active or potential radiocarbon centers in Europe to discuss mutual problems. The meeting was attended by representatives from Groningen, Heidelberg, Rome, British Museum (Natural History), Royal Institution of London, Cambridge, Göteborg, Stockholm, and Trondheim. The necessary support for the conference was provided by the Danish Rask-Ørsted Foundation. Dr. Hilde Levi of the University of Copenhagen Carbon-14 Dating Laboratory furnished us with mimeographed notes on the conference and a bibliography. The following is taken from a record of the conference by Professor H. Godwin as published in *Nature* (Vol. 174, No. 4436, November 6, 1954):

> The first day's discussion opened with consideration of technical matters associated with solid-carbon counting by methods essentially those of W. F. Libby, as now being used in Copenhagen and in Rome, and in preparation at Trondheim and Stockholm. This was followed by accounts of the processes being worked out for the use of gas-counters with the carbon in the form of carbon dioxide (Groningen and Heidelberg), acetylene (Royal Institution, British Museum and Harwell jointly, and Cambridge), and methane (Göteborg). Many interesting aspects of the counting gases were considered, more particularly the hydro-carbons.
>
> It became perfectly clear that gas-counting both by carbon dioxide and by acetylene is more expeditious and somewhat more sensitive than screen-wall counting of elemental carbon, and may be expected to displace the older method, which nevertheless is now producing a large part of the published datings. Only brief reference was made to scintillation counting.

Discussion on the third day concerned sources of error inherent in the samples and the techniques, and precautions which they involve, and some brief consideration of datings secured by European projects. It was apparent that, while cross-checking of samples could usefully be considered in this way, the implications of several unpublished datings were far too wide for the limited personnel and time of the meeting.

Some consideration was given to the standardization of form of publishing results, and to dating projects requiring international organization. It was agreed that a second symposium ought to be held, at least to deal with technical advances, within the next year or so and that *rapprochement* should be sought with American colleagues.

The National Science Foundation, the National Research Council, and the R. S. Peabody Foundation sponsored a conference on radiocarbon dating at Andover, Massachusetts, October 21–23, 1954. According to Kulp (1955) about forty physicists, chemists, biologists, geologists, arche-

TABLE I

ADVANTAGES AND DISADVANTAGES OF VARIOUS METHODS OF RADIOCARBON DATING

Method	Laboratories[1]	Advantages	Disadvantages
Solid carbon (Libby method)	University of Chicago[2] Columbia University[3] University of Pennsylvania University of Arizona University of Colorado Yale University[3] University of Trondheim University of Copenhagen University of Rome University of Stockholm		Wasteful of sample material. Low count rate. Susceptible to airborne contaminants.
Scintillation	University of Chicago Los Alamos University of Manitoba	High count rate	Chemical preparation costly. Good for large samples only.
CO_2 Geiger Counter	University of Michigan	Easy chemical preparation. Efficient use of sample material. Not critical as to purity. Good for smaller samples.	Count rate low to medium. Electronics somewhat complicated.
CO_2 Proportional Counter	Humble Oil Company University of Groningen University of Heidelberg New Zealand Dominion Physical Laboratory	High count rate. Efficient use of sample material.	Hypersensitive to chemical impurities in gas; chemical preparations therefore require much care.
Acetylene Proportional Counter	U. S. Geological Survey Yale University Columbia University University of Cambridge British Museum (Natural History) Royal Institution (England)	Moderately high count rate. Excellent reproducibility. Efficient use of sample material.	Chemical preparation moderately difficult.
Methane Proportional Counter	Magnolia Petroleum University of Göteborg	High count rate. Efficient use of sample material.	Chemical preparation moderately difficult.

[1] Ward reports (p. 83) the establishment also of a radiocarbon laboratory in Warsaw.

[2] Has discontinued work.

[3] Has or is in process of changing from solid carbon to a gas sample method.

ologists, and anthropologists traded ideas, techniques, and problems.

A field technique of considerable future importance is being developed by Dr. F. R. Matson of Pennsylvania State College. This is a careful segregation by flotation on water and fine-mesh sieves of charcoal from ancient hearths or occupation levels where there are very little organic remains. Three other collection methods were tried for comparative purposes. These have been applied successfully in shelter deposits in southern Illinois (Libby, 1954b). Matson is now, 1954–1955, recovering carbon samples from many of the well-known Mesopotamian sites. The flotation method also was used to collect carbon from a shell midden in California (Suess, 1954b, p. 468, Sample W–27).

Another example of a special technique for the recovery of datable carbon material was used in securing an organic extract from mud which was obtained by extraction with acetone, evaporation to a thick syrup, and the precipitation of the resinous material by the addition of water (Libby, 1954b, p. 739, C–894–89). Concentration of organic material from a soil zone was also important in obtaining a date for terraces in Nebraska. Small amounts of carbon were extracted from the profile. From this, barium carbonate was prepared. and this was then processed for the Chicago counter (Libby, 1952a, p. 676, C–645). Investigation of these techniques should be made by archeologists who do not have sites with large amounts of charcoal and other readily available organic material.

Antevs (1953a, 1954b) has prepared what is probably the strongest disagreement with radiocarbon dating results. His opinions of the passage of time in North America in the late Pleistocene are based on his varve chronology and his revision of his estimates of the gaps in the varve data. There is a clear discrepancy between Antevs' interpretation of post-glacial chronology in New England, the Great Lakes-Hudson Bay area, and the sequence in the Utah lake basins, and that provided by the radiocarbon dates. Antevs has properly emphasized certain possibilities of error in the radiocarbon dating besides the statistical one and comments on radiocarbon dates which are self-contradictory. We also, alas, have been forced to express disagreement with certain radiocarbon dates for eastern United States prehistory. In spite of, then, a certain sympathetic community of spirit with Antevs, the continued trend of radiocarbon dates of 11,000 B. P. (Before Present) for the Two Creeks interval and relatively correct temporal alignment of earlier and later glacial events, suggests that perhaps Antevs has slipped a correlation somewhere, perhaps at the beginning of his sequence. On the whole, Antevs believes that the radiocarbon dates are too low. The interesting idea is presented (Antevs, 1953a, p. 221): "Of the numerous radiocarbon dates of wood and peat in the eastern half of the United States, several are so obviously too low that they should not have been published." This view we do not share, since, if more of the doubtful radiocarbon runs had been published, there might not have been the uncritical acceptance of dates as issued in some cases because it was felt that radiocarbon dates were "scientific."

A geological report which furnished Quimby (1954) with a considerable amount of his data is that of Hough (1953a) whose report on *Pleistocene Chronology of the Great Lakes Region* made extensive use of core samples and other phases of submarine geology in order to complete a chronology of the closing phases of the Great Lakes Pleistocene. This work plus radiocarbon dates has indicated significant changes in the interpretation of the history of the Great Lakes. The most important of these is the recognition of the low water level in the Huron-Michigan basin following Lake Algonquin.

Hough has also presented his interpretation of a Pacific Ocean core sample taken off the west coast of South America. The variations in core calcareousness is interpreted as a result of cold or warm climate. "Age determinations made by W. D. Urry, using the 'percentage of equilibrium method' for uranium, ionium, and radium give dates for the various layers covering a period of several hundred thousand years. The detailed interpretation of this core gives dates for the end of the Kansan glacial stage (about 700,000 years ago), for three substages of the Illinoian glacial stage (330,000; 310,000; and 274,000 years ago), for six substages of the Wisconsin glacial stage (64,000; 51,000; 37,000; 26,000; 15,000; and 11,000 years ago), and for a post-glacial thermal maximum centering at 6,000 years ago." (Hough, 1953b, p. 252.)

In papers to be published in 1955, James H. Zumberge of the University of Michigan, Department of Geology, and J. E. Potzger of Butler University will present data of a correlation of the post-glacial floral succession in southwestern Michigan with the Lake Michigan basin water level changes. These events have been dated by the radiocarbon laboratories at The University of Chicago, the University of Michigan, and the U. S. Geological Survey. The early floral dominance is that of the spruce-fir and is correlated with a radiocarbon date of 11,000 years ago and the Bowmanville low water stage of Lake Chicago. A minimum date for Lake Algonquin, an ice-free North Bay outlet, and a waning spruce-fir forest is set at 8,000 years ago. The lowest level of the newly identified Lake Chippewa in the Lake Michigan basin and the oak-pine period in the South Haven area is 5,100 years ago. The Lake Nipissing maximum and the Xerothermic for this latitude is roughly 4,000 years ago according to their interpretation of the evidence.

From the standpoint of archeology and the natural sciences, these advances in radiocarbon dating are of importance for two reasons. The first is the considerable increase in time depth, back 40,000 to 50,000 years, which can be utilized effectively by students of late Pleistocene events and of Upper Paleolithic developments. The second is the increase in precision of the dates, for in many areas human cultural phenomena were not sufficiently pinpointed because of the margin of error inherent in the original counting technique. Within the next five or ten years it is probable that the sources of disagreement will be fewer on the interpretation of dated materials and events. This turn of events has come at an apt time, so that if what appears to be the development of a number of acrimonious publication debates can be postponed, we should have more accurate reckonings. Apparently, radiocarbon dates, even when "right," will not be able to satisfy all the interpreters of past events. This is simply an unreasonable demand on radiocarbon dating.

GEOLOGICAL AND POLLEN DATING

Present prospects for significant temporal results for archeologists in the study of trace metals in the soils, as represented by the work of V. P. Sokoloff (Sokoloff and Carter, 1952) in Georgia and Florida, or in the Lower Mississippi Valley (Sokoloff, 1953), are not too good. Such studies may be of value in differentiating origins of soils which would be of value in areas such as the Lower Mississippi Valley where different drainages supply distinctive materials to the alluvial flood plain. Studies of fossil and buried soils, soil profiles, and other soil weathering observations are represented by such papers as Simonson (1954), Ruhe and Gould (1954), MacClintock (1954), and in a specific archeological context by Cornwall (1954) at Stonehenge. The type of weathering of rock surface called "desert varnish" is effectively correlated with culture change by Hunt (1954) and is relied upon as an indicator of antiquity in Death Valley by Thomas and Lydia Clements (1953). A survey of geological aids to the interpretation of the passage of time has been made by Péwé (1954b). His paper, however, makes it appear as though geologists were "dating" sites whereas they may be said to provide an interpretation of the relative age. Other techniques, such as the radiocarbon method, provide the dates. No amount of geological interpretation is of much value in dating human material when the recovery of the specimens is not carefully controlled as was the case of Minnesota "Man" and Tepexpan Man. Archeologists can be impressed by these aids from geology, but also should be aware of their difficulties and uncertainties. This was pointed out by Quimby (1954, p. 319) in his assay of North American post-Mankato glacial history as it applied to archeological problems. "What it [Quimby's paper] may not show, but should, is that geologists are just as confused and confusing as archeologists."

There is then a slow increment of information on post-glacial climatic change in North America, and thus of the passage of time, from pollen studies and other analyses of changes of organisms in the post-glacial environment. There is recognized a general amelioration of climate reaching a period of maximum warmth, followed by a period of a slightly colder climate. These studies are taking place throughout most of the North American area. An excellent study of lake environments and their organic make-up during the Pleistocene with an excellent bibliography is given in a recent study by Deevey (1953). Among recent additions to the literature is the interpretation of the Wisconsin glacial and post-glacial period in central Iowa by Ruhe and Scholtes (1955). They present data to support the contention that during the Iowan advance of somewhat more than 17,000 years ago, the Iowan-Tazewell interval, and the Cary glaciation of about 12,400 years ago, central Iowa had a climate similar to that of northern Minnesota at the present time. They believe that during the Brady interval between the Tazewell and Cary advances, which lasted some 4,000 years, the climate was not unlike the present one in Iowa.

The absence of tundra vegetation except in Maine in the eastern United States area has been somewhat surprising. However, a spruce-fir domination in the lower level of lakes in the Great Lakes region is a consistent feature of pollen studies, with the gradual change of forest type to a period of pine dominance, then a mixed hardwood, and a tendency for the re-emphasis of pine. The significance and the date of northern forest species in Texas (Potzger and Tharp, 1954) and North Carolina (Frey, 1953) is still the subject of some debate. The movement of boreal genera and species to the south was, of course, not limited to plants, but animals such as the musk ox and the hairy mammoth have been found as far south as Texas and Florida. It is not certain when in the Pleistocene this shift took place. By the time of adequate information of Indian occupation in the eastern United States during the Archaic stage, such beasts as the musk ox, reindeer, and moose had retreated to their present range, if the absence of their skeletal remains in sites in the Ohio Valley and lower Great Lakes is a mark of their absence in these areas at that time.

Pollen work in the Northwest Coast and southeastern Alaska has been pursued by Heusser (1952, 1953, 1954), who presents evidence for the glacier minimum and thermal maximum in southeastern Alaska at some 5,000 to 2,000 years ago. Other papers on pollen studies include those of Potzger (1953) from southern Quebec; Iversen (1954) on the origin of flora in western Greenland; Sears (1952) and Mangelsdorf (1954) on materials from Mexico. Szafer (1953) has a review of both micro- and macro-flora in Poland during the Pleistocene; Lüdi (1953) has a survey of interglacial deposits in the northern Swiss Alps from the standpoint of floral composition and succession; Nakamura (1952) has a comparative study of Japanese pollen records; and Conway (1954) describes the succession in the southern Pennines in England.

CHEMICAL METHODS OF DATING

Certainly the most publicized application of chemical methods of dating was the elimination of Piltdown Man and his "associated" artifacts and animals and their puzzling inconsistencies from consideration in the story of the development of man (Weiner, Oakley, and Clark, 1953). In this case, it should be mentioned that a wide variety of scientific techniques were brought to bear which indicated that the materials were not old and contemporary, but of mixed origin and date. Such techniques can be used both to certify and refute claims of antiquity. The fluorine tests indicated that the Piltdown human skull fragments were late recent and that the jaw bone was that of a modern form, shown by anatomical studies to be that of an orang-utan. Other tests indicated that the miscellaneous *animal skeletal* fragments and artifacts all had been altered to give an appearance of antiquity.

Other examples of successful employment of the fluorine tests for relative antiquity can be found in the application to the Saldanha skull (Drennan, 1953) in South Africa, to the Keilor skull in Australia (Gill, 1953a, b), and to the human skeleton excavated by Wendorf and Krieger from the sand-blow near Midland, Texas. Wendorf reported at the American Anthropological Association's 1954 annual meeting in Detroit that fluorine tests had been made indicating contemporaneity of the human bone and the extinct fauna in nearby deposits. It should be possible to apply the fluorine test to the Tepexpan skeleton and to a number of the nearby Pleistocene faunal skeletal remains for a chemical determination of the age of the human skeleton.

Considerable progress has been made in the chemical analysis of bone in order to determine its relative antiquity. Studies made earlier have been on the fat content, citric acid content, calcium and nitrogen content, and measured loss of these materials during burial in the soil. The major active research on this approach to relative dating is by Cook and Heizer of the University of California. They have been able to demonstrate significant differences in the organic and inorganic constituents of buried skeletal material with relation to the length of time it has been buried. These studies furnish a complementary age technique to establish rough contemporaneity and a general idea of antiquity of such skeletal material from a localized area. Many of their papers are listed in Heizer (1953). For their latest papers see Cook and Heizer (1953a, b).

The Piltdown specimens were also subjected to another test, that of radiometric assay of the uranium content of the fossil (Oakley, 1954b). By and large, with increasing geological age of a fossil there is an increase in the measurable radioactivity. Contemporaneous materials from a specific bed or horizon have very similar radioactive measurements, but contemporaneous fossils from different geological beds which have widely differing proportions of uranium available for absorption will, of course, vary significantly. This principle is thus similar to that of the fluorine and other chemical tests.

The presence of coins in certain early historic sites is a definite aid to precise chronological reckoning. Caley and Deebel (1955) have been able to identify coin blanks from ancient Athens to within a fifty-year time span just before the birth of Christ by the chemical composition of the bronze. They indicate that this method could be employed to identify worn coins. Some such technique would undoubtedly be of value in separating the spurious from the genuine Chinese and southern European bronzes.

DENDROCHRONOLOGY

A number of important papers on dendrochronology have appeared recently. The first of these by Smiley (1951) is a summary of the chronological record for the Southwest derived from the resources of the Laboratory of Tree-Ring Research at the University of Arizona. Over 5,600 tree-ring specimens obtained from 365 sites were used to provide a final table listing 116 sites or areas which range from the earliest dated ring of 11 A. D. to well within the historic period. The earliest dated sites are of Basketmaker II cultural level from near Durango, Colorado. This paper is important not only because it summarizes the dating results of the foremost dendrochronology laboratory, but also because of Smiley's admonitions to archeologists in which he emphasizes that ". . . the meaning of the tree ring dates found in the various sites must remain a problem for the archeologists. The dendrochronologist dates the wood. What that date means in prehistoric studies can be told only by its association with facts and artifacts in the individual site from which it was obtained." A somewhat similar summary is provided for a more restricted locale in the Rio Grande area of New Mexico by Smiley, Stubbs, and Bannister (1953). The same reasoning, of course, is applicable to radiocarbon dating where an organic sample is assigned a probable time range. The significance of this date, however, is interpreted by the archeologist who must be certain of the association of the organic material with a particular historic unit or strata.

Outside of the southwestern United States, dendrochronology has been successful in one area in the Mississippi Valley, and in Alaska. Various individuals are preparing master charts in Finland, Sweden, Norway, Germany, and England (Zeuner, 1953, pp. 400–402). As yet, no prehistoric dates have come to my attention from Europe, although cross-dating of floating series within the Bronze Age has been successful.

PALEOGRAPHY

Paleography, the identification of manuscript material according to the style of writing, was a dating method employed in interpreting the age of the Dead Sea Scrolls by Trever (1953). The jars with which the scrolls were associated were dated typologically to the first century B. C. or to the early part of the first century A. D. A radiocarbon date for linen cloth associated with the scrolls was A. D. 33 ± 200 years (Libby, 1952b, C. 576). Estimates of the age according to forms of grammar, spelling, and historical allusions varied from the second century B. C. to the Crusades! The paleographical interpretation first suggested was for a date of some 2,000 years ago. Trever believes ". . . they could not possibly be as old as the third century B. C. papyri. But the lower limit is not so easy, in view of the paucity of our materials from the first and second centuries A. D."

GLOTTOCHRONOLOGY

While glottochronology is not obtained by excavation, identification of artifacts, or radiation, it is a recently developed technique for interpreting the passage of time (Swadesh, 1953; Lees, 1953; Hockett, 1953; Hirsch, 1954; and Swadesh *et al.,* 1954). Based on linguistic analysis, it provides a valuable aid to the archeologist and in the last cited work has been checked against the data which prehistorians and ethnologists feel they control. We are not as sanguine about the results as some of our colleagues who have expressed the opinion that it is as accurate as radiocarbon dating.

SUMMARY

The technical advances during the past few years in obtaining chronology are of unusual importance to the prehistorian. These advances have come from the physical and natural sciences, and their effective utilization calls for greater familiarity on the part of the archeologist with the techniques and principles of these fields of knowledge. It is true that methods of obtaining chronology by typology, seriation, or other such techniques will necessarily be practiced and are of value. The trend, however, is clearly evident as to the proportional value for dating of the archeologist's judgment based on experience, and the more precise aids which are now at his disposal. It is to be hoped that training centers for archeologists, particularly in the United States, will be able in the future to emphasize these vital fields in their instructional programs.

REFERENCES

AHLMANN, H. W.

1953 *Glacier Variations and Climatic Fluctuations* (Bowman Memorial Lectures, Series Three). New York: The American Geographical Society. 51 pp.

ALLISON, IRA S.

1952 "Dating of Pluvial Lakes in the Great Basin," *American Journal of Science*, Vol. 250, No. 12, pp. 907–909.

Allison, Jean; Godwin, H.; and Warren, S. H.
1952 "Late-Glacial Deposits at Nazeing in the Lea Valley, North London," *Philosophical Transactions of the Royal Society of London, Series B. Biological Sciences,* Vol. 236, No. 632, pp. 169–240.

Anderson, Ernest C. and Levi, Hilde
1952 "Some Problems in Radiocarbon Dating," *Det Kongelige Danske Videnskabernes Selskab, Matematiskfysiske Meddeleser,* Bind 27, Nr. 6, pp. 1–22. Copenhagen.

Anderson, E. C.; Levi, Hilde; and Tauber, H.
1953 "Copenhagen Natural Radiocarbon Measurements, I," *Science,* Vol. 118, No. 3053, pp. 6–11.

Antevs, Ernst
1953a "Geochronology of the Deglacial and Neothermal Ages," *Journal of Geology,* Vol. 61, No. 3, pp. 195–230.
1953b "On Division of the Last 20,000 Years," *Papers in California Archaeology* (University of California Archaeological Survey, Berkeley, No. 23), pp. 5–8.
1954a "Climate of New Mexico during the Last Glacio-Pluvial," *Journal of Geology,* Vol. 62, No. 2, pp. 182–191.
1954b "Geochronology of the Deglacial and Neothermal Ages: A Reply," *Journal of Geology,* Vol. 62, No. 5, pp. 516–521.

Arnold, James R.
1954 "Scintillation Counting of Natural Radiocarbon, I, The Counting Method," *Science,* Vol. 119, No. 3083, p. 155.

Barker, H.
1954 "Radiocarbon Dating" (Techniques of Research—7), *The Times Science Review,* No. 14, p. 9. London.

Belous, Russell E.
1953 "The Central California Chronological Sequence Re-examined," *American Antiquity,* Vol. XVIII, No. 4, pp. 341–352.

Blau, Monte; Deevey, E. S., Jr.; and Gross, M. S.
1953 "Yale Natural Radiocarbon Measurements, I, Pyramid Valley, New Zealand and Its Problems," *Science,* Vol. 118, No. 3053, pp. 1–6.

Brainerd, George W.
1953 "A Re-examination of the Dating Evidence for the Lake Mohave Artifact Assemblage," *American Antiquity,* Vol. XVIII, No. 3, pp. 270–271.

Broecker, Wallace and Kulp, J. Lawrence
1954 "Carbon 14 Age Research (Abstract)," *Bulletin of the Geological Society of America,* Vol. 65, No. 12, Pt. 2, p. 1234.

Caley, Earle R. and Deebel, Wallace H.
1955 "Chemical Dating of Bronze Coin Blanks from the Athenian Agora," *The Ohio Journal of Science,* Vol. LV, No. 1, pp. 44–46.

Carter, George F.
1952 "Interglacial Artifacts from the San Diego Area," *Southwestern Journal of Anthropology,* Vol. 8, No. 4, pp. 444–456.

Clark, J. Desmond
1954 "A Provisional Correlation of Prehistoric Cultures North and South of the Sahara," *The South African Archaeological Bulletin,* Vol. 9, No. 33, pp. 3–17.

Clements, Thomas and Lydia
1953 "Evidence of Pleistocene Man in Death Valley, California," *Bulletin of the Geological Society of America,* Vol. 64, No. 10, pp. 1189–1204.

Cole, Sonia
1954 "Modern Methods of Dating," *The South African Archaeological Bulletin,* Vol. 9, No. 33, pp. 18–24.

Collins, Henry B.
1953 "Radiocarbon Dating in the Arctic," *American Antiquity,* Vol. XVIII, No. 3, pp. 197–203.

Conway, Verona M.
1954 "Stratigraphy and Pollen Analysis of Southern Pennine Blanket Peats," *Journal of Ecology,* Vol. 42, No. 1, pp. 117–147.

Cook, Sherburne F. and Heizer, Robert F.

1953a "Archaeological Dating by Chemical Analysis of Bone," *Southwestern Journal of Anthropology*, Vol. 9, No. 2, pp. 231–238.

1953b "The Present Status of Chemical Methods for Dating Prehistoric Bone," *American Antiquity*, Vol. XVIII, No. 4, pp. 354–358.

Cornwall, I. W.

1954 "Soil Science and Archaeology with Illustrations from Some British Bronze Age Monuments," *Proceedings of the Prehistoric Society (for 1953)*, Vol. XIX, n.s., Pt. 2, pp. 129–147.

Craig, Harmon

1954 "Carbon 13 in Plants and the Relationships between Carbon 13 and Carbon 14 Variations in Nature," *Journal of Geology*, Vol. 62, No. 2, pp. 115–149.

Crane, H. R.

1954a "A Method of Eliminating Cathode Activation Effects in GM Counters," *Physical Review*, No. 93, p. 921.

1954b "The Initiation of the Discharge in a CO_2-filled GM Counter by Negative Ions," *Physical Review*, No. 94, p. 1437.

Dansereau, Pierre

1954 "The Postglacial Pine Period," *Transactions of the Royal Society of Canada*, Sec. 5, Series 3, Vol. 47, pp. 23–38.

Deevey, Edward S., Jr.

1953 "Paleolimnology and Climate," pp. 273–318 in Shapley, Harlow (ed.), *Climatic Change*. Cambridge: Harvard University Press. 318 pp.

Donner, Joakim

1952 "On the Early Post-Glacial Shore-Line Displacement in Southeast Finland," *Suomalaisen Tiedeakatemian Toimituksia Annales Academiae Scientiarum Fennicae*, Series A, III Geologica-Geographica, No. 29, pp. 1–22. Helsinki.

Dreimanis, A.

1954 "Two Late Wisconsin Interstadial Deposits from Ontario, Canada (Abstract)," *Bulletin of the Geological Society of America*, Vol. 64, No. 12, Pt. 2, p. 1414.

Drennan, M. R.

1953 "The Saldanha Skull and Its Associations," *Nature*, No. 172, pp. 791–793.

Emeneau, Murray B.

1954 "Linguistic Prehistory of India," *Proceedings of the American Philosophical Society*, Vol. 98, No. 4, pp. 282–292.

Fergusson, G. J.

1953 "Activity Measurement of Samples for Radiocarbon Dating," *New Zealand Journal of Science and Technology*, Vol. 35, No. 1 (General Research Section), pp. 90–108.

1955 "Radiocarbon Dating System," *Nucleonics*, Vol. 13, No. 1, pp. 18–23.

Fergusson, G. J. and Rafter, T. A.

1953 "New Zealand C^{14} Age Measurements," *New Zealand Journal of Science and Technology*, Vol. 35, No. 1 (General Research Section), pp. 127–128.

Flint, Richard F.

1952 "The Ice Age in the North American Arctic," *Arctic*, Vol. 5, No. 3, pp. 135–152. Ottawa.

1953 "Probable Wisconsin Substages and Late Wisconsin Events in Northeastern United States and Southeastern Canada," *Bulletin of the Geological Society of America*, Vol. 64, No. 8, pp. 897–919.

Frey, David G.

1953 "Regional Aspects of the Late-glacial and Post-glacial Pollen Succession of Southeastern North Carolina," *Ecological Monographs*, Vol. 23, No. 3, pp. 289–313.

Gill, Edmund D.

1953a "Geological Evidence in Western Australia Relative to the Antiquity of the Australian Aborigines," *Memoirs of the National Museum of Victoria, Melbourne*, No. 18, pp. 25–92.

1953b "Fluorine Tests Relative to the Keilor Skull," *American Journal of Physical Anthropology*, Vol. 11, n.s., No. 2, pp. 229–230.

Godfrey, C. L. and Riecken, F. F.

1954 "Distribution of Phosphorous in Some Genetically Related Loess-derived Soils," *Soil Science Society of America, Proceedings*, Vol. 18, pp. 80–84.

Godwin, H.

1954 "Carbon-14 Dating Symposium in Copenhagen, September 1–4," *Nature*, Vol. 174, No. 4436, p. 868.

Goldthwait, Richard P.

1952 "Geological Situation of the Orleton Farms Mastodon," *The Ohio Journal of Science*, Vol. LII, No. 1, pp. 5–9.

Gvosdetsky, Vasyl

1954 "Mountain Glaciation and History of Lake Bonneville (Abstract)," *Utah Academy of Sciences, Arts and Letters, Proceedings*, Vol. 31, p. 168.

Heizer, Robert F.

1953 "Long Range Dating in Archeology," pp. 3–42 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

Heizer, Robert F. and Cook, Sherburne F.

1953 "Capay Man, An Ancient Central California Indian Burial," *Papers in California Archaeology* (University of California Archaeological Survey, Berkeley, No. 24), pp. 24–26.

1954 "Comments on the Piltdown Remains," *American Anthropologist*, Vol. 56, No. 1, pp. 92–94.

Heusser, Calvin J.

1952 "Pollen Profiles from Southeastern Alaska," *Ecological Monographs*, Vol. 22, No. 4, pp. 331–352.

1953 "Radiocarbon Dating of the Thermal Maximum in Southeastern Alaska," *Ecology*, Vol. 34, pp. 637–640.

1954 "Additional Pollen Profiles from Southeastern Alaska," *American Journal of Science*, Vol. 253, No. 2, pp. 106–119.

Hirsch, David I.

1954 "Glottochronology and Eskimo and Eskimo-Aleut Prehistory," *American Anthropologist*, Vol. 56, Pt. 1, No. 5, pp. 825–838.

Hockett, Charles R.

1953 "Linguistic Time-Perspective and Its Anthropological Uses," *International Journal of American Linguistics*, Vol. 19, No. 2, pp. 146–151.

Hopkins, D. M. and Benninghoff, W. S.

1954 "Evidence of a Very Warm Pleistocene Interglacial Interval on Seward Peninsula, Alaska (Abstract)," *Bulletin of the Geological Society of America*, Vol. 64, No. 12, Pt. 2, pp. 1435–1436.

Hopkins, D. M. and Giddings, J. L., Jr.

1953 "Geologic Background of Iyatayet Archeological Site, Cape Denbigh, Alaska," *Smithsonian Miscellaneous Collection*, Vol. 121, No. 11, pp. 1–33.

Horberg, Leland

1954 "Rocky Mountain and Continental Pleistocene Deposits in the Waterton Region, Alberta, Canada," *Bulletin of the Geological Society of America*, Vol. 65, pp. 1093–1150.

Hough, Jack L.

1953a *Pleistocene Chronology of the Great Lakes Region* (Office of Naval Research, Contract N6051–07133). Urbana: University of Illinois. 108 pp.

1953b "Pleistocene Climatic Record in a Pacific Ocean Core Sample," *Journal of Geology*, Vol. 61, pp. 252–262.

Hunt, Charles B.

1954 "Desert Varnish," *Science*, Vol. 126, No. 3109, pp. 183–184.

Iversen, J.

1953 "Radiocarbon Dating of the Alleröd Period," *Science*, Vol. 118, No. 3053, pp. 9–12.

1954 *Origin of the Flora of Western Greenland in the Light of Pollen Analysis* (Oikos-Acta Oecologica Scandinavica, Vol. IV, Fasc. 2). Copenhagen: Ejnar Munksgaard.

Kroeber, A. L. and others

1953 *Anthropology Today: An Encyclopedic Inventory*. Chicago: University of Chicago Press. 966 pp.

KULP, J. LAWRENCE

1954 "Low Level Counting, Key to Advances in Radiocarbon Dating," *Nucleonics*, Vol. 12, No. 12, pp. 19–21.

KULP, J. L.; TRYON, L. E.; ECKELMAN, W. R.; and SNELL, W. A.

1952 "Lamont Natural Radiocarbon Measurements II," *Science*, Vol. 116, No. 3016, pp. 409-414.

LAROCQUE, AURELE

1952 "Molluscan Faunas of the Orleton Mastodon Site, Madison County," *The Ohio Journal of Science*, Vol. LII, No. 1, pp. 10–27.

LEES, ROBERT B.

1953 "The Basis of Glottochronology," *Language*, Vol. 29, pp. 113–127.

LEOPOLD, L. B. and MILLER, J. P.

1954 *A Postglacial Chronology for Some Alluvial Valleys in Wyoming* (United States Geological Survey Water-Supply Paper 1261). Washington.

LIBBY, WILLARD F.

1952a "Chicago Radiocarbon Dates, III," *Science*, Vol. 116, No. 3025, pp. 673–681.

1952b *Radiocarbon Dating*. Chicago: University of Chicago Press. 124 pp.

1954a "Chicago Radiocarbon Dates, IV," *Science*, Vol. 119, No. 3083, pp. 135–141.

1954b "Chicago Radiocarbon Dates, V," *Science*, Vol. 120, No. 3123, pp. 727–733.

LOUGEE, RICHARD J.

1953 "A Chronology of Postglacial Time in Eastern North America," *The Scientific Monthly*, Vol. LXXVI, No. 5, pp. 259-276.

LÜDI, WERNER

1953 "Die Pflanzenwelt des Eiszeitalters im Nördlichen Vorland der Schweizer Alpen," *Geobotanisch Institut Rübel*, Vol. 27, pp. 1–208. Zürich.

MACCLINTOCK, PAUL V.

1954 "Leaching of Wisconsin Glacial Gravels in Eastern North America," *Bulletin of the Geological Society of America*, Vol. 65, No. 5, pp. 369–384.

MANGELSDORF, PAUL

1954 "New Evidence on the Origin and Ancestry of Maize," *American Antiquity*, Vol. XIX, No. 4, pp. 409–411.

NAKAMURA, JUN

1952 "A Comparative Study of Japanese Pollen Records (in Japanese with English summary)," *Bulletin of the Society of Plant Ecology*, Vol. 2, No. 1, pp. 18–29.

OAKLEY, KENNETH P.

1953 "Dating Fossil Human Remains," pp. 43–56 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

1954a "Dating of the Australopithecinae of Africa," *American Journal of Physical Anthropology*, Vol. 12, n.s., No. 1, pp. 9–25.

1954b "Methods of Dating Bones" (Techniques of Research—6), *The Times Science Review*, No. 13, pp. 14–16. London.

OPIK, E. J.

1953 "On the Causes of Palaeoclimatic Variations and of the Ice Ages in Particular," *Journal of Glaciology*, Vol. 2, No. 13, pp. 213–218.

PÉWÉ, TROY L.

1954a "Brief Review of Quaternary Events in Alaska (Abstract)," *Bulletin of the Geological Society of America*, Vol. 65, No. 12, Pt. 2, pp. 1293–1294.

1954b "The Geological Approach to Dating Archaeological Sites," *American Antiquity*, Vol. XX, No. 1, pp. 51–61.

POTZGER, JOHN E.

1953 *Nineteen Bogs from Southern Quebec* (Bulletin No. 9, Service de Biogéographie, Université de Montreal). Montreal. 18 pp.

POTZGER, J. E. and THARP, B. C.

1954 "Pollen Study of Two Bogs in Texas," *Ecology*, Vol. 35, No. 4, pp. 462–466.

QUIMBY, GEORGE I.

1954 "Cultural and Natural Areas before Kroeber," *American Antiquity*, Vol. XIX, No. 4, pp. 317–331.

RAFTER, T. A.

1953 "The Preparation of Carbon for C^{14} Age Measurements," *New Zealand Journal of Science and Technology*, Vol. 35, No. 1 (General Research Section), pp. 64–89.

RALPH, ELIZABETH K.

1955 "University of Pennsylvania Radiocarbon Dates, I," *Science*, Vol. 121, No. 3136, pp. 149–151.

ROOSA, WILLIAM B. and PECKHAM, STEWART L.

1954 "Notes on the Third Interglacial Artifacts," *American Antiquity*, Vol. XIX, No. 3, pp. 280–281.

ROUSE, IRVING

1952 "The Age of the Melbourne Interval," *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 23, pp. 293–299.

RUHE, ROBERT V. and GOULD, LAURENCE M.

1954 "Glacial Geology of the Dakota County Area, Minnesota," *Bulletin of the Geological Society of America*, Vol. 65, No. 8, pp. 769–792.

RUHE, R. V. and SCHOLTES, W. H.

1955 "Radiocarbon Dates in Central Iowa," *Journal of Geology*, Vol. 63, No. 1, pp. 82–92.

SEARS, PAUL B.

1952 "Palynology in Southern North America. I: Archaeological Horizons in the Basins of Mexico," *Bulletin of the Geological Society of America*, Vol. 63, No. 3, pp. 241–246.

SEARS, PAUL B. and CLISBY, KATHRYN H.

1952 "Pollen Spectra Associated with the Orleton Farms Mastodon," *The Ohio Journal of Science*, Vol. LII, No. 1, pp. 9–10.

SHAPLEY, HARLOW (ed.)

1954 *Climatic Change*. Cambridge: Harvard University Press. 318 pp.

SIMONSON, ROY W.

1954 "Identification and Interpretation of Buried Soils," *American Journal of Science*, Vol. 252, No. 12, pp. 705–732.

SMILEY, TERAH L.

1951 *A Summary of Tree-Ring Dates from Some Southwestern Archaeological Sites* (University of Arizona Bulletin, Vol. 22, No. 4; Laboratory of Tree-Ring Research Bulletin No. 5). Tucson. 32 pp.

SMILEY, TERAH L.; STUBBS, STANLEY A.; and BANNISTER, BRYANT

1953 *A Foundation for the Dating of Some Late Archaeological Sites in the Rio Grande Area, New Mexico: Based on Studies in Tree-Ring Methods and Pottery Analyses* (University of Arizona Bulletin, Vol. 24, No. 3; Laboratory of Tree-Ring Research Bulletin, No. 6). 66 pp.

SOKOLOFF, V. P.

1953 "Occlusion of Copper and Zinc by Some Soil Materials of Lower Mississippi River Area," *Science*, Vol. 118, No. 3063, pp. 296–297.

SOKOLOFF, V. P. and CARTER, GEORGE F.

1952 "Time and Trace Metals in Archaeological Sites," *Science*, Vol. 116, No. 3001, pp. 1–5.

SUESS, H. E.

1954a "Natural Radiocarbon Measurements by Acetylene Counting," *Science*, Vol. 120, No. 3105, pp. 5–7.

1954b "Natural Radiocarbon Measurements by Acetylene Counting," *Science*, Vol. 120, No. 3112, pp. 467–473.

SWADESH, MORRIS

1953 "Archeological and Linguistic Chronology of Indo-European Groups," *American Anthropologist*, Vol. 55, No. 3, pp. 349–352.

SWADESH, MORRIS; QUIMBY, GEORGE I.; COLLINS, HENRY B.; HAURY, EMIL W.; EKHOLM, GORDON F.; and EGGAN, FRED

1954 "Time Depths of American Linguistic Groupings (A Symposium)," *American Anthropologist*, Vol. 56, No. 3, pp. 361–377.

SZAFER, W.

1953 "Pleistocene Stratigraphy of Poland from the Floristical Point of View (in Polish)," *Anales Société de Géologie de Pologne*, Vol. 22 (1), pp. 1–99.

TAX, S. *et al.* (eds.)
1953 *An Appraisal of Anthropology Today*. Chicago: University of Chicago Press. 395 pp.
TE PUNGA, M. T.
1953 "Radiocarbon Dating of a Rangitikei Terrace," *New Zealand Journal of Science and Technology,* Vol. 35, No. 1 (General Research Section), pp. 45–48.
THOMAS, EDWARD S.
1952 "The Orleton Farms Mastodon," *The Ohio Journal of Science,* Vol. LIII, No. 1, pp. 1–5.
TREVER, JOHN C.
1953 "Studies in the Problem of Dating the Dead Sea Scrolls," *Proceedings of the American Philosophical Society,* Vol. 97, No. 2, pp. 184–193.
TROWBRIDGE, A. C.
1954 "Mississippi River and Gulf Coast Terraces and Sediments as Related to Pleistocene History—A Problem," *Bulletin of the Geological Society of America,* Vol. 65, No. 8, pp. 793–812.
WAUCHOPE, ROBERT
1954 "Implications of Radiocarbon Dates from Middle and South America," *Middle American Research Records,* Vol. II, No. 2, pp. 17–40. New Orleans: Tulane University.
WEINER, J. S. and OAKLEY, KENNETH P.
1954 "The Piltdown Fraud: Available Evidence Reviewed," *American Journal of Physical Anthropology,* Vol. 12, n.s., No. 1, pp. 1–7.
WEINER, J. S.; OAKLEY, K. P.; and CLARK, W. E. LE GROS
1953 "The Solution of the Piltdown Problem," *Bulletin of the British Museum (Natural History), Geology,* Vol. 2, No. 3, pp. 139–146.
WENDORF, FRED and ALBRITTON, CLAUDE C., JR.
1954 "Stratigraphy and Chronology of the Scharbauer Site, Midland, Texas (Abstract)," *Bulletin of the Geological Society of America,* Vol. 65, No. 12, Pt. 2, p. 1323.
WHITE, SIDNEY E.
1953 "Early Man in Eden Valley: A Review," *The Ohio Journal of Science,* Vol. LIII, No. 6, pp. 321–324.
WILLETT, HURD C.
1953 "Atmospheric and Oceanic Circulation as Factors in Glacial-Interglacial Changes of Climate," pp. 51–72 in Shapley, H. (ed.), *Climatic Change.* Cambridge: Harvard University Press. 318 pp.
WOOD, ALBERT E.
1952 "Tooth-Marks on Bones of the Orleton Farms Mastodon," *The Ohio Journal of Science,* Vol. LII, No. 1, pp. 27–28.
WRIGHT, H. E., JR.
1952 "The Geological Setting of Four Prehistoric Sites in Iraq," *Bulletin, American Society of Oriental Research,* No. 128, pp. 11–24.
ZEUNER, F. E.
1953 *Dating the Past.* 3rd ed. London: Methuen and Company. 495 pp.
ZUMBERGE, JAMES H. and POTZGER, J. E.
1955 (In press) "Late Wisconsin Chronology of the Lake Michigan Basin Correlated with Pollen Profiles and Radiocarbon Dates," *Science.*

Culture History and Cultural Development

CHRISTOPH VON FÜRER-HAIMENDORF

Professor of Asian Anthropology in the University of London, Dr. von Fürer-Haimendorf is Head of the Department of Cultural Anthropology in the School of Oriental and African Studies, and also sometime Adviser to the Hyderabad State Government for Tribes and Backward Classes, and Professor of Anthropology in the Osmania University, India. He is author of The Chenchus, Jungle Folk of the Deccan, London, 1943; The Reddis of the Bison Hills. A Study in Acculturation, London, 1945; and The Raj Gonds of Adilabad, A Peasant Culture of the Deccan, London, 1948.

THE most significant trend in the anthropological approach to culture history during the years 1952–1954 has been the increasing dependence of ethnologists on the findings of prehistoric archeology. This trend is most marked in the American field where the continuity of cultural development from prehistoric to contemporary or historic indigenous civilizations offers unparalleled scope for the coordination and mutual stimulation of archeological and ethnographic research. A common interest in culture-sequences and the possibility of tracing existing civilizations directly to prehistoric antecedents favors here the integration of the excavator's and the field anthropologist's data, but even in the Old World, where such immediate continuity is confined to relatively few areas, ethnologists concerned with culture historical problems are leaning more and more on archeological evidence.

The nature of the cooperation between anthropologists and prehistorians, however, has of late undergone a noticeable change. Whereas previously it was largely on the level of world-wide generalizations, the present emphasis is on cooperation in the interpretation of material from circumscribed areas. The possibility of elucidating archeological finds with the help of general ethnographic analogies is not explicitly discounted, but in the period under review there have been no significant attempts at inter-continental parallelizations in the manner, for instance, of O. Menghin's *Weltgeschichte der Steinzeit* (Vienna, 1931).

With the development of relatively exact methods of dating, as instanced by dendrochronology and, above all, by the radiocarbon technique, archeologists have been able to arrange an increasing number of archeological assemblages in reliably established sequences, and hence they can look forward with some confidence to a time when it will be possible to trace the development of man's material equipment throughout the inhabited world, if not in every detail, at least in broad outline.

Anthropologists, on the other hand, have become more cautious in professing their ability to fill the inevitable gaps in the archeologists' canvas of prehistoric civilizations, particularly in so far as the earliest phases of human life are concerned. The idea, so confidently held during the first decades of the century, that the study of present-day primitive populations can yield an accurate picture of the social and spiritual attainments of Paleolithic man, no longer finds support among the majority of anthropologists.

Archeologists, meanwhile, have set out to reconstruct patterns of cultural life in the Stone Age without explicit recourse to ethnographic analogies. One of the most systematic and ambitious of these attempts is R. Pittioni's book *Vom geistigen Menschenbild der Urzeit* (1952), whose author emphasizes the autonomy of prehistoric archeology and proposes to demonstrate what prehistory can tell us of the "intellectual (*geistige*) content of primeval cultures." Following a method based "on the fact that primeval (*urzeitliche*) cultures constitute a totality in which every part stands in a definite position to the whole" (p. 3), he deduces from the lithic material certain basic sociological situations. He argues that the possibility of dividing the early and the middle phases of the Old Stone Age into the European-Mediterranean "world" of blade-tools, the East Asian "world" of chopper tools, and the African "world" of hand-axe tools, shows "the similarity of cultural intent throughout wide spaces and associated with it a basic community of cultural knowledge" (p. 48). Such a basic community of purpose is only possible, however, if the primary cells of a social order, the individual families, share in an inner intellectual nexus, if they are oriented toward a definite essential order. "Hence the common cultural will must have been conscious" (p. 49). In the local variations recognizable in the later and latest lithicum, Pittioni sees the archeological reflection of comparatively small social units, but he emphasizes that archeological data do not, at this stage, point to any achievements of individuals. These become manifest only with the creations of the Aurignacian artists.

Pittioni (p. 130) concludes "that lithic man by his imperishable cultural monuments has given proof of the identity of his intellectual essence with that of modern humanity. The multiplicity of the cultural modifications created by man during the total course of history is irrefutable evidence of his ability of free choice in any situation, and thereby humanity has pronounced itself against any cultural schematization and the hypothesis of intellectual repetition."

Ethnographic analogies are ignored on the ground that they belong to the present day or to the recent past and cannot be transposed to primeval conditions. This point of view implies a total abandonment of the detailed equations of prehistoric and contemporary cultures previously put forward by O. Menghin and a number of anthropologists and historians (e.g., F. Kern, 1953) influenced by him and his school. That the belief in the possibility of such equations is by no means dead, however, though now it mainly affects studies marginal to anthropology, is demonstrated by such books as *De Godsdienst der Praehistorie* by J. Maringer (1952).

Equations between prehistoric and present-day cultures have been attacked from quite a different angle by Claude Lévi-Strauss (1952a). His skepticism arises not so much from the absence of observable continuity but from the interior evidence of primitive societies, and particularly of those of South America.

> "Une véritable société primitive devrait être une société harmonieuse, puisqu'elle serait, en quelque sorte, une société en tête-à-tête avec soi. Nous avons vu, au contraire, que dans une vaste région du monde, à bien des égards privilégée pour notre étude, celles qui pourraient sembler le plus authentiquement archaïques sont toutes grimaçantes de discordances où se découvre la marque, impossible á meconnaître, de *l'événement*. D'innombrables fêlures, survivant seules aux destructions du temps, ne donneront jamais l'illusion d'un timbre originel, là ou, jadis, résonnèrent des harmonies perdues" (p. 25).

Lévi-Strauss holds that inner discordances are typical of what he calls pseudo-archaic societies, for according to him (p. 24) these are "condemned societies, as one may see from their precarious position in the environment in which they try to maintain themselves as well as in their relations to neighbors who subject them to their pressure."

In a brief study on *Race and History*, Lévi-Strauss (1952b) elaborates his views on the limited possibility of interpreting archeological data with the aid of ethnographic parallels. While he admits that "there may well be one resemblance between paleolithic societies and certain contemporary societies"—namely the use of chipped-stone tools—he believes (p. 17) that even in the technological sphere one group can teach us very little about the other. Criticizing the parallelizations of whole cultures, he writes (pp. 16–17): "We can know only certain aspects of a vanished civilization; and the older the civilization, the fewer are these aspects since we can only have knowledge of things which have survived the assault of time. There is therefore a tendency to take the part for the whole and to conclude that, since *certain* aspects of true correlations (one contemporary and the other lost in the past) shows similarities, there must be resemblances in *all* aspects. Not only is this reasoning logically indefensible but, in many cases, it is actually refuted by the facts."

Lévi-Strauss ascribes the development of civilization principally to the interaction and combination of diverse cultures and their respective achievements. The more "cumulative" a culture, the greater is the probability of complex combinations leading to progress. "Cumulative history has never been produced by isolated cultures, but by cultures which, voluntarily or involuntarily, have combined their play and, by a wide variety of means (migrations, borrowing, trade, and welfare), have formed . . . coalitions . . ." (p. 41).

"A culture's chance of uniting the complex body of inventions of all sorts which we describe as civilization depends on the number and diversity of the other cultures with which it is working out, generally involuntarily, a common strategy." (p. 42).

From the whole argument it is obvious that Lévi-Strauss, while skeptical regarding a narrow equation between prehistoric and primitive cultures, relies for an interpretation of the great cultural currents in world history on a combination of archeological and ethnological findings.

A more positive view vis-à-vis the equation of prehistoric and contemporary cultures is taken by Robert Redfield in his recent book *The Primitive World and Its Transformations* (1953). Though not specifically concerned with individual parallels, Redfield proceeds throughout the book on the implicit assumption that our knowledge of present-day primitive societies does to some extent permit us to reconstruct even those aspects of ancient societies about which archeological data *per se* are silent. While admitting that "the antiquity of the moral order is not fully attested by archeology," he expresses (p. 17) the opinion that "fifty thousand years ago mankind had developed a variety of moral orders, each expressed in some local tradition, and comparable to what we find among the aborigines to-day." Like Pittioni, though on somewhat different grounds, Redfield invokes the artists of the Aurignacian to demonstrate that the sensibilities of Paleolithic man were basically similar to those of contemporary man.

Analyzing the interaction of the technical and the moral order, Redfield comes to the conclusion (p. 24) that "the great transformations of humanity are only in part reported in terms of the revolutions in technology with resulting increases in the number of people living together." He assumes that there have also occurred changes in man's modes of thought and value systems which may also be called "radical and indeed revolutionary innovations," but that these changes "do not reveal themselves in events as visible and particular as do material inventions, or even always as increasing complexity in the systems of social relationships" (p. 25).

Redfield does not offer a precise formula as to the method of identifying change in intellectual and moral habits, but he thinks a beginning might be made "by examining the manner of life of the most primitive people we know today, and perhaps also something that is told us about ancient peoples, for evidence of the appearance of forms of thought, belief, or action which a little knowledge of the history of some civilization shows us became influential in changing human life" (p. 25).

Redfield traces the transformation of

folk-societies into urban civilization, illustrating an overall trend with examples taken from the ancient civilizations of the Near East, from China, as well as from America. In this overall trend he finds certain regularities, and he introduces the term "style of life" to describe "what is most fundamental and enduring about the ways of a group persisting in history." He suggests (p. 52) that two peoples with "cultures" as different as those of the Lapp and the Bedouin, may yet in certain general ways of looking at the world, and in the emphasis on certain virtues and ideals, prove to have the same "style of life."

Underlying Redfield's argument is the idea that a comparison of past and present Central and South American civilizations with the ancient civilizations of Europe and the Near East may reveal significant regularities of process in the development of the moral order.

This idea of the comparability of civilizationary processes must not be confused, however, with the assumption of a basic identity or repetitivity of such processes in different parts of the world. This is emphasized by Wolfram Eberhard, who, in *Conquerors and Rulers* (1952), discusses and dismisses the theory that "Oriental civilizations," such as those of China, India, Mesopotamia, and Egypt, have an essentially identical social structure. In his opinion (p. 125), "any understanding of each of these civilizations, and especially of Chinese civilization, is possible only on the basis of the concept that each civilization is the product of unique, historical developments, and—an individual case."

The increased interest in historical change and its causation has motivated a number of minor studies on the development of certain aspects of culture. Of these, Betty J. Meggers' "Environmental Limitation on the Development of Culture" (1954) may be quoted as a closely argued attempt to establish verifiable correlations in the sphere of culture history. Operating with four levels of culture development traceable in South America and Europe, she arrives at the conclusion (p. 822) that "the level to which a culture can develop is dependent upon the agricultural potentiality of the environment it occupies." This concept of differential cultural potentialities is applied to the Maya problem, and seems to provide an explanation of certain aspects of the development and decline of Maya civilization consistent with the archeological evidence.

Correlations between an efficient primary control over food supply on the one hand and social, political, and intellectual potentialities on the other, are traced also in a recent publication by R. J. Braidwood entitled *The Near East and the Foundations for Civilization* (1952). According to Braidwood, the first traces of food production appear around 6,000 B. C., when in the Near East an established food-producing settled-village type of economy seems to have come into being "with relative (or even revolutionary) suddenness" (p. 5). He believes that the food-producing revolution was dominated by the technologico-economic factor, but that civilization would not have appeared on the basis of the new food-producing efficiency alone; ". . . it was the further development of social, political, moral, and religious forces which made possible the integration of the growing populations into a functioning civilization" (p. 6). The burden of providing evidence for an understanding of the *how* and *why* of civilization's appearance rests mainly on the prehistoric archeologist. In the interpretation of his artifactual materials he may be aided by "the method of extrapolation backwards from understandings gained through the written records of later times in the same area," or even by "observations made in the ethnological present." (p. 7).

Braidwood does not subscribe to Childe's view that the change from pre-civilizational food production to civilization was again a change in kind on the technologico-economic level, but concurs with Redfield's thesis that the great change came in the realms of social institutions, forms of thought, and moral ideas, a point of view which has recently also been stressed by Peter Bensch (1952) in his article "Die

Entstehung der primären Hochkulturen als ethnologisches Problem."

With regard to the problem of one or several independent beginnings of civilization in the Old World, Braidwood tends to the thesis that both Egypt and Harappa draw their inspiration from Mesopotamia. The case for an independent genesis of civilization in the Far East, where in the Yellow River basin the civilizational level was reached by at least 1500 B. C., is considered highly speculative, but he assumes that around 500 B. C. there may have been either one or two separate experiments in civilization in the New World, and he points (p. 2) to the possibility of using them as a "comparative yardstick against which to test our understanding of the civilizational process of the Old World."

While it is obvious that the separate and, in so many respects, different lines on which civilization developed in the Old and the New World offer exceptionally valuable material for comparative studies, the theory of the complete independence of the growth of civilization in Middle America and the Andes, so long an article of faith among Americanists, can no longer go unchallenged. Evidence is accumulating that besides the trans-Pacific diffusion of such isolated elements as tobacco, sweet potatoes, and certain types of cotton, there have been, at definite and roughly datable times, movements from Asia to the west coast of America.

The most recent contribution to this problem so relevant to the interpretation of American culture history is Robert von Heine-Geldern's 1954 study "Die Asiatische Herkunft der südamerikanischen Metalltechnik." Supporting his argument with a wealth of striking archeological parallels from both sides of the Pacific Ocean, Heine-Geldern puts forward the thesis that contacts between the coastal areas of China and Peru, which began toward the end of the eighth century B. C., were responsible for the introduction of gold-working in South America. Most of the later trans-Pacific parallels point to the Dongson culture of Tonkin, and Heine-Geldern believes that in Colombia and in Panama metals became known only through contacts with the Dongson complex. These contacts are likely to have taken place in the fourth century B. C., a date which coincides with the radiocarbon dating of the Mochica culture, and they may have lasted until the first century B. C. or even the first century A. D. The range, variety, and distribution of Dongson influences in South America, from Costa Rica to northern Argentina, speak for fairly intensive connections over a long period of time.

It is difficult to see how the parallels and analogies discovered by Heine-Geldern could be explained in a way excluding historical connections, and while he himself emphasizes the hypothetical character of some of his conclusions, there can be little doubt that much of his basic thesis will stand the test of further work on both sides of the Pacific. The question as to the one time existence of an independent center of civilization in America raised by Braidwood cannot be divorced from the problem of trans-Pacific migrations. Their occurrence, even in the form outlined by Heine-Geldern, does not necessarily exclude the possibility of an independent concentration of civilizationary forces in the Andean region and Central America, a concentration which may have needed only the stimulus of some advanced techniques to blossom into full-fledged high civilizations. The fact that similar stimuli undoubtedly reached Oceania without producing such results, and cultural radiation from the civilizations of the Near East and Europe have never given rise to a comparable development in Africa south of the Sahara, would seem to speak for such a possibility.

Heine-Geldern's argument is based almost exclusively on archeological evidence, and it perhaps is significant that the final word in the controversy over trans-Pacific culture contacts is likely to be spoken by prehistoric archeologists and not by ethnologists. It is in the evaluation and interpretation of archeological data that T. Heyerdahl's voluminous work, *American Indians in the Pacific* (1952), as indeed his whole theory of the peopling of Polynesia from America, reveals its most serious weaknesses.

The discovery of new archeological facts and the consequent reinterpretation of known data has led to a complete reversal also in another sphere of ethnological research, namely that concerned with the origin and early stages of animal domestication. For the past fifty years continental ethnologists have given a great deal of thought to this problem. The independent development of pastoralism from the primitive food-gathering and hunting cultures, and the subsequent role of the nomadic pastoralists in the formation of ancient Asiatic civilizations, was one of the basic theories of the late Wilhelm Schmidt. Departing from Eduard Hahn's theory of the development of cattle domestication among settled agricultural populations, Schmidt and his school laid great stress on the antiquity and independence of reindeer and horse breeding by Central Asian nomads, and believed that the domestication of cattle was a later achievement resulting from the impact of nomadic horse-breeders on settled farmers. Archeological discoveries in the Near East, a useful summary of which has recently been provided by Dyson (1953), have proved this thesis untenable, and the past three years have seen the publication of a number of studies containing a reassessment of the whole problem (e.g., Hančar, 1952; Jettmar, 1952, 1953, 1954; Zeuner, 1954).

Karl Jettmar (1952), for instance, has surveyed the data which have a bearing on the early history of reindeer domestication, and comes to the conclusion that reindeer breeding on an economic scale is a comparatively late development, certainly later than the domestication of cattle, which may have provided the model for the domestication of the reindeer. Archeological finds in the area of the reindeer's natural habitat (e.g., in the Minussinsk and the Altai regions) have shown that up to the middle of the third millennium B. C. there were in this region no domestic animals at all, and that in the Baikal area the first bones of domestic animals appear about 3000 B. C. However, they are not those of reindeer but of cattle and sheep, and all sites which yield such animal bones have significant connections with southern cultures.

The evidence leaves little doubt that the domestication of cattle, sheep, and horse did *not* originate on the steppe-belt lying immediately to the south of the reindeer area, but that developed forms of pastoral economy spread into that area from regions further to the south. Hence reindeer domestication cannot have influenced the development of the breeding of other herd animals, a circumstance which rules out the earlier theories of Schmidt and F. Flor, and seems also to militate against the recent hypothesis by Henn Polhausen (1954), who tries to trace the early domestication of reindeer and other domestic animals to a phase at the end of the Paleolithic age, when nomadic hunters began to "accompany" herds of wild reindeer, until the animals became tame enough to submit to domestication.

Jettmar and more recently F. E. Zeuner (1954) have pointed out, however, that Coon's excavations in Iran, and particularly the evidence from the Belt cave on the coast of the Caspian Sea, suggest the domestication of such "nomadic" animals as goat and sheep by hunting people in late Mesolithic times. Zeuner (1954, pp. 351, 352) seems to be in sympathy with a hypothesis which puts the domestication of nomadic animals, such as goat and sheep, before that of cattle, but whether the domestication of goat and sheep prior to the rise of an agricultural economy ultimately will be proved or not, the theory of a pastoral nomadism based on the early domestication of the horse by the peoples of the Asian steppes as held by W. Schmidt must be considered dead. And with it died the idea that pastoral warriors were the organizing and politically dominant element within the first advanced civilizations based on a combination of farming and animal husbandry.

The abandonment of the *Hirtenkulturkreis*, however, is not the only reassessment of culture historical theories postulated by the members of the Vienna School. Judging from recent publications, one can hardly doubt that the very concept of *Kulturkreis* in the sense developed by Graebner and Schmidt has largely been discarded. Josef Haekel (1952–1953) expresses this very clearly in an article on the cultural stratification of Brazil when he questions, "whether the *Kulturkreise* as hitherto defined, have ever really existed." He argues that the "span of life" of cultural elements can show great variation, and that "some cultures are very conservative, in regard to certain elements, while others are not." While the original concept of the *Kulturkreis* is based on the assumption of "a prolonged persistence of cultural elements and an enduring, basically stable and so-to-say organic association (*Vergesellschaftung*) of elements and phenomena, which embrace all essential parts of cultural life" (p. 969), Haekel suggests that superficially similar culture-complexes in different parts of the world may have come into being at distinct times and through an incidental accumulation of the constituent culture-elements, and that such apparently analagous culture-complexes never may have belonged to an originally homogeneous *Kreis*. To obviate a future error of lumping together basically different, though outwardly somewhat similar, cultural phenomena, Haekel insists that "historically orientated" ethnologists should pay special attention to the study of local cultural processes and changes, which are just as much historical events as migrations and transmissions of culture-elements. "The historical method of ethnology," he continues (p. 970), "is in need of a far-reaching extension, of a sharpening and a deepening of its criteria. Particular emphasis must be laid on research into local factors, into the inner life of a culture, in which judiciously planned investigations into structural and functional problems, as well as the recognition of overt and covert patterns can be valuable aids."

Haekel sets out to apply these principles to an investigation of the cultural stratification of Brazil, the results of which he himself considers in the nature of a preliminary working hypothesis. Taking one group of tribes after the other, he attempts to isolate the various strata, and arrives at a pattern, infinitely more complex and detailed than any of the earlier historical reconstructions. He does not subscribe, however, to Lévi-Strauss's theory of degeneration and cultural impoverishment, and when he finds that in the region now inhabited by the North-western Ge, who lack pottery, there existed a prehistoric culture with a comparatively developed ceramic, he concludes that the Ge, coming from the savannas of Eastern Brazil, must have pushed out or exterminated the prehistoric, more advanced, pottery-makers. (Cf. also Baldus, 1954).

After a detailed analysis of a large number of "culture phases," Haekel (1953, p. 156) comes to the conclusion that the *Kulturkreise* postulated by Schmidt on the basis of apparent similarities with Oceanic cultures, must be abandoned even as a working hypothesis. "The possibility of an old world origin of specific cultural elements and institutions must always be kept in mind . . . 'mass immigrations' of old world populations across the Pacific, however, must be excluded. Thus I see great difficulties in the way of the assumption that whole 'Kulturkreise' should have entered South America by way of the Pacific."

The doubts of many members of the Vienna School in the absolute primitivity and archaism of many contemporary hunting and collecting peoples—the *Altvölker* of Schmidt's terminology—has been voiced also by Paul Schebesta. In his book *Die Negrito Asiens* (1952a) he states explicitly: "We must abandon the idea that the Negritos are untouched peoples. But the people with whom the Andamanese, the Semangs and the Negritos came in contact, were of a different type. In regard to the Andamanese the position is not yet clear; among the Semangs the influence of the Veddid Senoi is predominant, while the impact of the Austronesian quadrangular-axe culture and also the Mon-Khmer wave must be taken into account. The Aeta have been subjected to several cultural waves. . . ." In another and later context (1954, p. 691), however, Schebesta takes a more positive view of the archaism of the culture of present-day food-gatherers: "The degree of the lack of differentiation in a culture

(*Kulturundifferenziertheit*) taken as a whole is everywhere the best criterium for the relative antiquity (*entwicklungsgeschichtliche Alter*) of a culture. That on the basis of this criterium the Altvölker reflect primordial conditions (*die Urzeit*) better than others, seems to be beyond all doubt."

This view is shared by W. Nippold (1954, p. 87), whose recent study of the early forms of private property rests on the assumption that undifferentiated cultures of hunters and collectors have retained a number of extremely ancient traits, and that from these one may draw conclusions regarding the beginnings of human cultural life.

The shifting of interest and emphasis among the members of the Vienna School is noticeable in the recent writings of even so close an associate of the late Father Schmidt as Wilhelm Koppers. In a paper read on August 27, 1954, at the Congress of Americanists in São Paulo, for instance, Koppers declares himself in favor of an approach to problems of historical connections which starts from the more recent and tangible materials, and then, going backwards and, so-to-say, lifting layer after layer, tries to penetrate to the older and finally the oldest common features. This approach is, as he emphasizes, diametrically opposed to the method which he himself followed in his early attempt to establish a cultural connection between Southeast Australia and the extreme south of South America.

In the same paper, Koppers points out that the primitive North American food-gatherers, whom Schmidt regarded as representative of an *Urkultur*, can be linked with Neolithic hunting-cultures, and that hence they cannot be equated with a true *Urkultur*. Though in North America the Neolithic hunters were preceded by late- or post-Pleistocene food-gatherers, there is no evidence of a "genetic" continuity between the respective prehistoric cultures, and it must be considered doubtful, therefore, whether the religious complex delineated by Schmidt can be attributed to the late Paleolithic hunters or whether it was brought to America by immigrants of Neolithic culture. Koppers believes that this complicated problem cannot be solved on the basis of American data alone, but elsewhere (Koppers, 1953) he has expressed himself in favor of the general validity of Schmidt's thesis regarding the religions typical of the most primitive and "ancient" peoples.

From the late P. Wilhelm Schmidt's pen, the period under review includes, in addition to a number of articles, a contribution to *Historia Mundi* (Schmidt, 1952a), and two more volumes of his monumental work, *Der Ursprung der Gottesidee* (1952c, 1954). These two volumes do not deal with the religions of primitive tribes, but contain an analysis based on historic as well as ethnographic sources of the ritual and the religious beliefs of such advanced peoples as the Mongols, the Buriats, the Yakuts, and the Yukagirs.

Among the more recent anthropological publications there is nothing to match in scope and volume the material presented in this great encyclopedia of primitive and pre-literate religions. For the work of most modern anthropologists, whether historically or sociologically inclined, is weighted in favor of a description or analysis of individual societies or cultures rather than of inquiries into general problems in a world-wide frame of reference.

One of the few anthropological works aiming at a synthesis of culture history is Kunz Dittmer's *Allgemeine Völkerkunde* (1954), a book modest in volume but ambitious in concept, which sets out to give a general outline of the cultural developments from the "beginnings" up to the rise of high civilizations. There is the implicit assumption that ethnographic data from contemporary primitive people permit a reconstruction of the growth of culture in general terms, but when he deals with such specific problems as the early domestication of animals and plants, Dittmer relies largely on archeological evidence. In contradistinction to the concept of culture as an entity independent of individual societies, first developed by Frobenius and recently revived by Leslie A. White, Dittmer regards culture as "tied to a specific ethnic unit." Cultural elements are likely to be borrowed from other ethnic units only if they can be fitted into the structure of a people's own culture. Often this can be achieved only by a certain transformation or even a change in function. "For a culture will always try to assimilate borrowings as well as new creations to its own pattern and thereby invest them with the expression of its own 'spirit'." (pp. 30-31).

Despite the explicit recognition of the fundamental link between a culture and a specific ethnic unit the emphasis throughout the book is on "culture" rather than on "society" or "population." Dittmer retains the term *Kulturkreis*, but mentions (p. 35) the difficulty of delineating *Kulturkreise* on the basis of the geographic distribution of cultural elements, "since their essential functional coordination within an organic structure is often not easily ascertainable." In continuing to speak, for instance, of "*a* megalithic *Kulturkreis*," he shows himself more conservative than the present members of the Vienna School, but in his assessment of the so-called *Urkultur* or *Kultur der Altvölker*, he departs from the position taken by Schmidt and Koppers. Using the same argument as Lévi-Strauss, he points out (p. 138) that even the most primitive peoples of today have an ancestry of "as many thousands of generations of forebearers as the peoples of the high civilizations," and that in the course of human evolution they too have undergone an internal development and have been subject to external influences. The evolution of the different races of *Homo sapiens* presupposes long periods of isolation in distinct environments, and the cultural development of these races in the process of formation must also have taken place in isolation. Cultural variation, Dittmer argues (p. 139), stands at the very beginning of human development, and hence no uniform *Urkultur* can be deduced from the contemporary races and peoples.

In its approach and frame of references Dittmer's *Allgemeine Völkerkunde* (1954) appears nevertheless as a direct sequel to *Völker und Kulturen* by Schmidt and Koppers (1924), and *Kulturens Veje* by Birket-Smith (1948). This continuity of emphasis and interest is a characteristic feature of much of the ethnological writing in Continental Europe, and there can be no doubt that nowhere outside America—where the close link between prehistoric archeology and ethnology favors culture historical studies of a somewhat different type—are problems of culture history so much the focal point of anthropological research as in Germany, Switzerland, Austria and Scandinavia. Gudmund Hatt's contribution to *Plough and Pasture*, of which he and E. Cecil Curwen (1953) are joint authors, is a good example of this attitude, which he summarizes (p. 152) in the following passage: "Ethnographers study living forms which are continuously changing. Waves of culture have passed over the lands from people to people, even long before Western civilization overflowed the earth. It is the purpose of ethnology to elucidate these movements. Ethnology and archeology have the same goal and must co-operate."

Birket-Smith emphasizes the same attitude. Discussing trends in Danish ethnology, he stated (1952, p. 122): "The historical approach is considered of paramount importance. Needless to say, the function of culture must also be studied, but function is only understood against the background of cultural development: if the study of function is further limited mainly to kinship relations, as some modern ethnologists seem to wish, who then is to explore the vast field of the history of human civilizations?"

The solid achievements of Scandinavian and particularly Danish historical ethnology lie, above all, in the field of Eskimo research (e.g., Birket-Smith, 1953), in which a combination of archeological and ethnographic studies has led to the accumulation of a most impressive body of knowledge on cultural stratification and early migrations.

But the interests of Scandinavian ethnologists are not confined to the ethnography of the Arctic, to which they have made so great a contribution. The wide range of their studies recently has been exemplified by G. Gjessing's *Mennesket og Kulturen* (1953), a textbook of cultural anthropology in two volumes, which aims at an overall picture of cultural developments supported by studies of individual peoples representative of various economic levels and adaptations to environment.

Though Evans-Pritchard has recently professed his belief in the necessity of a historical approach in anthropological studies, departures from a strictly synchronic treatment of ethnographic data among British anthropologists relate mainly to specific sequences of events within the more or less recent past. The value of diachronic studies is admitted, and the potentialities offered by a time depth of even one or two centuries is being increasingly utilized. Surveying the ethnic compositions of the Tswana Tribes of South Africa, I. Schapera writes (1952) for instance: "To understand how and why these variations [in the relations between chief and retainers, for instance] have developed, and indeed why the three class structure itself came into being, we obviously need to know a good deal about tribal history. It is only after we have analyzed the ethnic composition of each tribe, and learned how and when the different peoples it contains become incorporated, that we can proceed to compare adequately the resulting forms of social relationships." The historical background Schapera has in mind is one provided by oral tribal tradition, official records and the writings of early travelers and missionaries. Though mainly concerned with fairly recent history, he nevertheless ventures (p. 5) some suggestions regarding remoter periods such as that the Bushmen coming from the north were the first people to enter South Africa.

H. Baumann (1954) also stresses the importance of local culture historical research as part of anthropological field work. He points (p. 162) to the value of etiological tales and myths as source-material for the history of a people, and opposes the tendency to dismiss all such etiologies *a priori* as late products of a hypertrophied urge to rationalize and explain the origin of institutions or cultural achievements. Discussing a number of African examples, he also emphasizes (p. 163) the fact, "that among many populations the tribal and clan-structure still bear the traces of their heterogeneous ethnic composition. Unfortunately in many cases no attempt has been made to discover whether the clans and clan-groups constituting an ethnic group (*Volkstum*) appear only as exogamous, and possibly totemistic units, or whether they have preserved also significant cultural traits, which may point to [connections with] a neighboring people. The incorporation of compact residential units of neighboring tribes into an expanding ethnic group is a frequent phenomenon, even though usually only the subsequent assimilation (*Homogenisierung*) can be ascertained. All the more carefully should one investigate all signs of ethnic differentiation and their associations with sub-tribes and clans."

An attempt to reveal through a comparative analysis of ethnographic data the cultural stratification of a larger region is exemplified by A. E. Jensen's study of dual-systems in North-east Africa (1953). In this he isolates three cultural strata, i.e., a pre-Nilotic culture without dual-systems; an archaic, Nilotic stratum associated with cattle-breeding, the cultivation of grain-crops, and dualistic forms of social organization; and a Cushitic stratum which overlaid the older strata in the East and North of the region and is characterized by a dual-system without exogamous implications. Distinct from such regional studies, both in method and scope, is Diedrich Westermann's *Geschichte Afrikas* (1952), which provides, for the first time, the concrete data required by those who want to see African civilizations as a whole against the background of recorded and traditional history. Though principally an account of political events connected with the formation of African states south of the Sahara, Westermann's book has the great merit of integrating ethnological data into an overall picture of African culture history.

A far more detailed historical account of an individual African people is Eva Meyerowitz's *Akan Traditions of Origin* (1952), which together with her earlier work, *The Sacred State of the Akan* (1951), represents an integrated picture of the Akan State of the Gold Coast over nearly a thousand years, and proves how much can be achieved by a painstaking, and at the same time imaginative, study of oral traditions supported by historical research of the more orthodox type. Eva Meyerowitz (1951, p. 208) distinguishes in Akan history four different cultural phases, beginning with one in which the queen is the sole life-giver and ruler, and—after two phases during which the queen's status and power declines—ending with the establishment of the king as ruler of a state based on a territorial and military confederation. The main interest of this work lies in the closely documented and convincing demonstration of a sequence of cultural phases such as—in more general works—have often been regarded as "conjectural" history. From the safely established evidence regarding the internal developments in Akan State, Meyerowitz traces the history of the various populations back into the more distant past, and, there too, comes to significant conclusions, such as (1952, p. 124) that "the Akan people . . . came originally from the region between Djenne and Timbuktu, and some . . . from places further north in the Sahara desert. One can safely deduce therefore—and the descent in the matrilineal line is further proof of this contention—that the ancestors of the present Akan aristocracy were Saharan Libyan Berbers."

It is sometimes suggested that whether an anthropologist regards his discipline as belonging to the humanities or to science he is likely to organize his fieldwork on roughly similar lines. But if we compare Meyerowitz's work with the recent study of Timbuktu by H. Miner (1953) it is quite clear that in the field too different theoretical trends are likely to lead to a concentration on different problems and to an inevitable neglect of others.

Miner was mainly interested in the day-to-day relations of the individual ethnic, economic, and status groups, and he acknowledges (p. 268) the difficulty of combining sociological and ethnological research: "Compared to western cities, the heterogeneity of Timbuctoo appears to the writer to be more a product of diverse cultural origin and less a result of elaborate division of labor. Those two kinds of heterogeneity are theoretically comparable, but with our present limited tools, we cannot analyze the significance of the differences. This is particularly significant in that anthropologists tend to think of heterogeneity in terms of different cultural origins, while sociologists are more inclined to concern themselves with heterogeneity stemming from elaborations of the division of labor."

A novel approach to the problem of heterogeneity and cultural diversity among population groups making up a social system is contained in E. R. Leach's *Political Systems of Highland Burma* (1954). The main theme of this study of Kachin social structure is the oscillation of Kachin communities between conflicting social and political ideologies, and Leach (p. 4) sets out to demonstrate that "while conceptual models of society are necessarily models of equilibrium systems, real societies can never be in equilibrium." The fluctuations and compromises between two distinct and fundamentally incompatible social systems can be represented only by a diachronic method and, although Leach is not primarily interested in history, he relies on a great deal of historical material to exemplify the process involved. "It is not possible," he maintains (p. 285), "to describe . . . a process of change directly from the observation of first-hand ethnographic data. What one must do is first analyze out the ethnographic facts by reference to whole systems conceived of as existing in unstable equilibrium, and then postulate that the confusion of reality arises from the interpenetration of these unstable ideal systems." The events of recent history, stretching over some 150 years, provide the raw material for this analysis, and with their help Leach is able to show what happens when individuals and groups change their ethnic identity, and Kachins "become" Shans. The description of such a process and its implication is of great relevance to general problems of cultural change and ethnic interpenetration, two of the main factors in any theory of culture-history. Leach points out that, to the actors, such a change from Kachin to Shan hardly may be noticeable, and he holds (p. 287) that only the ethnocentric anthropologist may tend to suppose "that shifts in the culture and structural organization of a group must be of shattering significance." He depreciates the habit of anthropologists to operate with model systems—whether expressed in cultural or structural terms—conceived as stable and fixed systems, and believes that the equilibrium theory in social anthropology needs drastic modification.

Delineating in considerable detail the change of cultural pattern and even ethnic identity of specific groups, Leach provides material of a type called for by A. Lesser in his 1952 article "Evolution in Social Anthropology." Lesser advocates the study of sequential relations in which "the later condition immediately supersedes the earlier," and stresses that "the consideration of such conditions is basic to the problem of social or cultural process of change." He considers (p. 146) that the recognition of these types of problems of cultural development has been delayed too long: "The criticism of evolutionists tended to end in a complete nihilism as regards problems of cultural sequence and development. The result has been an undue timidity, even a taboo, as regards such problems."

This taboo has now been set aside, and problems of change and process play an increasingly important role in modern anthropological studies, particularly where historical records provide some measure of time depth. In the case of advanced civilizations such as those of India and Southeast Asia the time-depth may extend over several centuries, and even sociologically oriented anthropologists have been drawn to the historical approach. An example of this trend is provided by E. Kathleen Gough's article "Changing Kinship Usages in the Setting of Political and Economic Change among the Nayars of Malabar" (1952), which leads to a conclusion greatly at variance with the results of those acculturation studies which, in Leach's words (1954, p. 284), confined themselves to an "analysis of the swapping of particular traits between particular isolate cultures over a particular historical period of time." Summing up her argument Gough states (p. 86) that "analysis of the process of change in a kinship system over a period of time fails to reveal discontinuity. The Nayar system has, over a period of two hundred years, changed from a very extreme form of matriliny into a 'bilateral' system with only a weak tendency to matriliny; but the later system developed imperceptibly out of the earlier. This kinship change has been part of a process of growth taking place in the total social structure and not merely the direct adoption, by a 'contracted' from a 'contracting' group, of a set of behavior patterns and a pattern of kinship terms."

A study of kinship organization in India by Irawati Karve (1953) extends over an infinitely greater period. Utilizing material contained in Vedic and epic Sanskrit literature, Karve describes the development of Indian kinship behavior throughout a period of more than two thousand years, i.e., from epic times to the present day. A peculiar feature of this study are the genealogies and tables of kinship terms derived from the Mahabharata, an epic supposed to date from about 800 B. C. They provide evidence for a basic continuity in kinship systems over a period of time immensely longer than that usually covered by diachronic studies.

India provides yet another example for the way in which both ethnographic data and documentary historical material can be utilized in building up the culture historical framework for the study of a contemporary society. M. N. Srinivas' book *Religion and Society among the Coorgs of South India* (1952) is basically an anthropological study of the dominant caste-group in the small state of Coorg, but the customs and ritual practices current today are set against the background of traditional Hinduism of both the All-India and the provincial type. The clarification of concepts which results is remarkable, and Srinivas is able to explain general tendencies observable throughout India, which hitherto have not been analyzed by anthropological methods. Of the historical function of caste, for instance, he writes (p. 3): "Caste guarantees autonomy to a community, and at the same time brings that community into relation with numerous other communities all going to form a hierarchy. The importance of such an institution is obvious in a vast country like India which has been the meeting place of many different cultures in the past and which has always had considerable regional diversity. While the autonomy of a subcaste was preserved it was also brought into relations with others, and the hierarchy was also a scale of generally agreed values. Every caste tended to imitate the customs and ritual of the topmost caste, and this was responsible for the spread of Sanskritization. When this process is viewed on a continental scale and over a period of at least 2,500 years, it is easy to see how Sanskritic ideas and beliefs penetrated the remotest hill-tribes in such a manner as not to do violence to their traditional beliefs. Caste enabled Hinduism to proselytize without the aid of a church."

Whereas Srinivas has demonstrated the spread of Sanskritic ideas among the lower castes and aboriginal tribes, von Fürer-Haimendorf (1953b) has analyzed certain aspects of the interaction between Hindu and tribal ideologies which suggest a flow of concepts in the reverse direction. The concept of a separable soul, for instance, and the idea of transmigration and reincarnation, which were foreign to the Vedic Aryans, but are prominent in post-Vedic thought, are traced to eschatological beliefs characteristic of autochthonous, non-Aryan tribes, and, in this connection, it is pointed out (p. 47) that "to approach conflicting customs and ideas in popular Hinduism solely through the classical literature or the Brahmanical tradition is not likely to lead us to a full understanding of their basic nature. For the discrepancies are obviously due to a super-imposition of traditions stemming from different cultural horizons."

An attempt to isolate by a combination of archeological, ethnological, and historical studies such different cultural horizons within a limited area, namely the island of Bali, has been made in a volume produced by Goris and Dronker (1952?) in cooperation with the archeologist Th. van der Hoop. From their analysis, supported by extensive illustrative material, emerges a culture history of Bali in which elements of indigenous pre-Hindu culture (e.g., megalithic sanctuaries, animal sacrifices, ritual cock-fighting, etc.) can be distinguished clearly from the Hindu culture introduced, not from nearby Java, but direct from India in the eighth century A. D.

The influence of Indian culture on the civilizations of Southeast Asia, and particularly on the development of social systems and legal concepts, is stressed also in Robert Lingat's comparative study *Les Régimes Matrimoniaux du Sud-Est de l'Asie* (1952). The manner in which this influence was exercised was quite different from the impact of Chinese custom and law on such countries as Viet Nam. For there was no Indian "colonization" in the narrow sense of the term, but only a "colonisation spirituelle, due, non à la conquête, mais au prestige qu'exerce naturellement une civilisation supérieure sur des populations de moeurs encore primitives." Basic to Lingat's argument is the idea that the present marriage-systems and family laws can be understood and explained only as a result of a fusion of indigenous, Chinese, and Indian ideas, a fusion in which, however, indigenous concepts have largely prevailed.

A growing interest in the social and cultural problems of higher civilizations is an unmistakable trend in present-day anthropology, but the concrete application of anthropological field-techniques to the study of such civilization, so far has been confined to certain areas. Outstanding in volume and quality are the studies of Central and South American civilizations. In India, Southeast Asia, China, and Japan, there have been promising beginnings, but the Arabic-speaking Near East remains largely an untilled field.

The desirability of extending the anthropologist's frame of reference to the higher civilizations is widely recognized, however, and the following statement of D. Mandelbaum (1953, pp. 177–178) reflects a general trend: "The advantages for anthropology in working with national cultures and literate peoples are major. Documentary historical materials are available to provide the time perspective necessary for generalizations concerning cultural processes."

Interest in advanced, literate populations has brought anthropologists face to face with historical problems, and the question has been asked whether they have adequate tools to tackle such problems of long-term process. Robert Redfield and his associates are of the opinion that anthropologists can contribute to the understanding of the cultural processes peculiar to the great historic civilizations, and they operate freely with historical concepts. Leach, on the other hand, voicing the difficulties social anthropologists experience when dealing with historical problems, states (1954, p. 282) more cautiously: "We functional anthropologists are not 'anti-historical' by principle; it is simply that we do not know how to fit historical materials into our framework of concepts."

A most penetrating and illuminating review of the conceptual approaches of various leading anthropologists to the basic problems of culture history is contained in David Bidney's *Theoretical Anthropology* (1953, pp. 250–285). His own position becomes apparent when he declares himself in sympathy with Evans-Pritchard's humanistic philosophy of culture, but denies that the so-called historical method as such leads necessarily either to a humanistic or to a naturalistic and deterministic approach to the data of culture history. According to Bidney the nature of approach depends solely "upon one's metahistorical presuppositions, or philosophy of history and science." He does not agree, however, that anthropology is no more than a kind of historiography, but suggests that one may maintain the inseparability of pattern and process in culture history. The historian "should be interested in analyzing objective historical processes, as well as in evaluating significant patterns, without subscribing to the uncritical assumption that there are natural laws of culture history."

Having taken this position Bidney obviously finds little common ground with Leslie White, who regards culture as a reality *sui generis*, subject to its autonomous processes and laws. He comes "to the conclusion (p. 271) that White's divorce of history from evolution renders history unintelligible and evolutionary processes of no pragmatic value to the ethnologist." A major contradiction in White's theory is, according to Bidney, the assumption that the evolutionary laws may not be regarded as re-exemplified in the historical process. "For a non-repetitive law is . . . a contradiction in terms."

At the end of his review of current trends, Bidney states (p. 280) his own position and defines history as "our human description and interpretation of any natural process or sequence in the context of space and time." This definition implies that "culture history in particular comprises a study of both patterns, or forms, and processes and that it is fallacious to limit the study of history to forms without processes." Process and form cannot be separated and it is entirely arbitrary to assign form to history and process to science. But the historian and the natural scientist look at process and forms from different angles. The historian is interested "in understanding the origin and development of a series of forms and social institutions leading to a contemporary situation, while the natural scientist is interested primarily in the repetitive character of natural processes and in the universal principles which govern the relations between natural phenomena. This does not mean that the historian may not arrive at certain generalizations concerning the basic factors which determine the course of social and cultural history, and he may even be convinced that in certain respects history, too, repeats itself. But the historian grants that in the sphere of human history there are many more variables than constants, while for the natural scientist it is the constants that matter and the regularities are the objects of research" (pp. 282–283).

Cultural history is to Bidney (pp. 283–284) "the study of the cultural selection and of the cultural evolution of mankind. There is no predetermined immanent necessity or teleology in the evolution of human culture, taken phylogenetically or autogenetically, since culture is not a natural organism, subject to predetermined stages of growth. . . . Culture may be viewed as an expression of human freedom of creativity while subject to the limitations of nature." He sums up his position by stating (pp. 283–284): "The ethnological study of history, to be scientific, must be empirical and without restraining preconceptions derived from positivistic philosophies of science, as to the nature of the order and processes to be found therein. . . . While these may be a reason for every detail the historian may discover in the course of his researches, he would be foolhardy to assume that everything that happens is in accord with predetermined reason and law. It is not the business of a scientist to discover 'laws' where none exist."

The problem of the existence or non-existence of social "laws" is obviously of relevance to the student of culture history and cultural causation. For the time being anthropologists are still divided on this issue, but the controversy loses some of its edge when the protagonists of the existence of "social laws" define them as Meyer Fortes has done in his Inaugural Lecture (*Social Anthropology at Cambridge since 1900*, Cambridge University Press, 1952), where he stated: "Social laws refer to ideally isolated features of social life and can be stated only in terms of probabilities. The combination of factors that make up a particular occasion in the life of any society are not predictable and never will be, though each factor by itself may work in ways that can be foreseen within known limits of error." This seems to distinguish "social laws" clearly from the laws of physics, for modern physics obviously could never have been developed if not even complicated "combinations of factors" were reasonably predictable.

In an even wider sense is the concept of "law" employed by Louis Marin, when he writes (1952, p. 61): "Rappelons que découvrir un type est l'équivalent de découvrir une loi: dans l'un et l'autre cas on aboutit à une généralité, la première étant une généralité par similitude, la second étant une généralité causale entre des causes et effets."

A representative of ethnobiology, on the other hand, has recently raised her voice against the possibility of establishing laws or detailed regularities in the long-term development of populations. In her book *Das Problem des Völkertodes. Eine Studie zur historischen Bevölkerungsbiologie*, Ilse Schwidetzky (1954) points out that apart from a certain link between the decline of a people and qualitative or quantitative changes in the dominant population stratum, no laws or rules can be deduced from the available ethnohistorical facts—and this despite the multitude of sociological theories which seek to attribute the downfall or decline of different peoples to one and the same cause. "In effect every nation has perished or declined in its own manner, even though a number of ethnobiological mechanisms have come into action in several cases." And she concludes with the statement (p. 157) that there is no possibility "to deduce from the fates of historic nations predictions for the future of living populations."

Inseparable from the problem of predictability is the question whether social anthropology is a science or a branch of history. This question, which for years has been debated *ad nauseam* is described as "meaningless" by Fortes (1953, p. 36), and as "rather unimportant" by Robert F. Spencer (1954), who suggests (p. 130) that "the task of analyzing, comprehending, and depicting cultures as growth and wholes creates a dependence on the findings of the natural sciences as well as those of history and the humanities."

A historical approach, in Kroeber's sense (1952, pp. 160–161), "preserves not only the time and place of its phenomena but also their qualitative reality. It 'interprets' by putting data into an ever-widening context. Such context includes time as an implicit potential, but is not primarily characterized by being temporal. In the absence of chronological evidence a historical interpretation can still develop a context of space, quality, and meaning, and can be descriptively or 'synchronically historical'. . . . The 'scientific' approach on the contrary, aiming at process, can hope better to determine cause, which may be attainable only contingently or implicitly by historical method."

The discussions at the Wenner-Gren Foundation's 1952 Symposium, which are presumed familiar to the readers of this article and are therefore not quoted in detail, have made it plain that interest in problems of culture history persists on both sides of the Atlantic, even though the emphasis on a historical—in contradistinction to a "scientific"—approach, shows considerable local variations. That even in a country among whose anthropologists a decade ago the prestige of diachronic studies was at its lowest ebb, archeologists and anthropologists, such as V. Gordon Childe, H. S. Harrison, F. E. Zeuner, Daryll Forde, and E. R. Leach, were inclined to cooperate in the writing of *A History of Technology* (edited by C. Singer, E. J. Holmyard and A. R. Hall, 1954) perhaps can be taken as symptomatic of a revival of concern for historical problems, and, implicit in this joint effort, is also the recognition of the significance of present-day primitive cultures, no less than of prehistoric cultures, as representative types of early forms of cultural life.

REFERENCES

BALDUS, HERBERT
1954 "Kritische Bemerkungen zu einem brasilianischen Thema," *Anthropos,* Vol. 49, pp. 305–309.

BAUMANN, HERMANN
1954 "Ethnologische Feldforschung und Kulturhistorische Ethnologie," *Studium Generale,* Vol. 7, No. 3, pp. 151–164. Berlin, Göttingen, Heidelberg: Springer Verlag.

BENSCH, PETER
1952 "Die Entstehung der primären Hochkulturen als ethnologisches Problem," *Zeitschrift für Ethnologie,* Vol. 77, No. 2, pp. 165–187.

BIDNEY, DAVID
1953 *Theoretical Anthropology.* New York: Columbia University Press. 506 pp.
1954 "The Ethnology of Religion and the Problem of Human Evolution," *American Anthropologist,* Vol. 56, pp. 1–17.

BIRKET-SMITH, KAJ
1948 *Kulturens Veje.* København: Jespersen Og Pio. 728 pp.
1952 "The History of Ethnology in Denmark" (Huxley Memorial Lecture for 1952), *Journal of the Royal Anthropological Institute of Great Britain and Ireland,* Vol. LXXXII, pp. 115–128.
1953 *The Chugach Eskimo* (Nationalmuseets Skrifter Etnografisk Raekke, VI). Copenhagen: Nationalmuseets Publikationsfond. 261 pp.

BRAIDWOOD, R. J.
1952 *The Near East and the Foundations for Civilization* (Condon Lectures). Eugene, Ore.: Oregon State Systems of Higher Education. 45 pp.

CHILDE, V. GORDON
1952 *New Light on the Most Ancient East.* London: Routledge and Kegan Paul. 255 pp.
1954 "Archaeological Documents for the Prehistory of Science," *Cahiers d'Histoire Mondiale,* Vol. I, No. 4, April, pp. 739–759. Paris: Librairie des Méridiens.

CURWEN, E. CECIL and HATT, GUDMUND
1953 *Plough and Pasture. The Early History of Farming.* New York: Henry Schuman. 329 pp.

DITTMER, KUNZ
1954 *Allgemeine Völkerkunde. Formen und Entwicklung der Kultur.* Braunschweig: F. Vieweg & Sohn. 314 pp.

Dyson, Robert H.

1953 "Archaeology and the Domestication of Animals in the Old World," *American Anthropologist*, Vol. 55, Part I, pp. 661–673.

Eberhard, Wolfram

1952 *Conquerors and Rulers. Social Forces in Medieval China.* Leiden: E. J. Brill. 130 pp.

Fortes, M.

1953 *Social Anthropology at Cambridge since 1900. An Inaugural Lecture.* Cambridge: Cambridge University Press. 47 pp.

Foster, George M.

1953 "What is Folk Culture?," *American Anthropologist*, Vol. 55, Part 1, No. 2, pp. 159–173.

Fürer-Haimendorf, Christoph von

1953a "Altindien. Die vorgeschichtlichen und die primitiven Kulturen," *Historia Mundi*, Vol. 2, pp. 484–498. Bern: Francke Verlag.

1953b "The After-Life in Indian Tribal Belief," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 83, Part I, pp. 37–49.

Gjessing, Gutorm

1953 *Mennesket og Kulturen.* Vol. I. En sammenlignende etnografi, 298 pp.; Vol. 2. Kulturformene, 364 pp. Oslo: Gyldendal Norsk Forlag.

Goris, R. and Dronkers P. L., s. A.

(1952?) *Bali. Cults and Customs.* Djakarta: Government of the Republic of Indonesia. 208 pp.

Gough, E. Kathleen

1952 "Changing Kinship Usages in the Setting of Political and Economic Change among the Nayars of Malabar," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXXII, Part I, pp. 71–87.

Granet, Marcel

1953 *Études Sociologique sur la Chine.* (Bibliothèque de Sociologie Contemporaine). Paris: Presses Universitaires de France. 301 pp.

Heine-Geldern, R.

1954 "Die Asiatische Herkunft der sudamerikanischen Metalltechnik," *Paideuma*, Vol. 5, pp. 347–423.

Gupta, N. C.

1952 *Evolution of Ancient Indian Law.* London: Arthur Probsthan; Calcutta: Eastern Law House, Ltd. 348 pp.

Haekel, Josef

1952–1953 "Neue Beiträge zur Kulturschichtung Brasiliens," *Anthropos*, Vol. 47, pp. 963–991; Vol. 48, pp. 105–157.

1953–1954 "Zum Problem des Mutterrechtes," *Paideuma, Mitteilungen zur Kulturkunde*, Vol. V, No. 6, pp. 298–322; Vol. V, No. 7/8, pp. 481–508.

Hančar, Franz

1952 "Stand und historische Bedeutung der Pferdezucht Mittelasiens im I. Jahrtausend v. Chr.," *Wiener Beiträge zur Kulturgeschichte und Linguistik*, Vol. IX, pp. 466–511.

Heyerdahl, Thor

1952 *American Indians in the Pacific. The Theory behind the Kon-Tiki Expedition.* London: Allen & Unwin; Stockholm, Oslo. 821 pp.

Jensen, Ad. E.

1953 "Dual-Systeme in Nordost-Afrika," *Anthropos*, Vol. 48, pp. 737–759.

Jettmar, Karl

1952 "Die Anfänge der Rentierzucht," *Anthropos*, Vol. 47, pp. 737–766.

1953 "Archäologische Spuren von Indogermanen in Zentralasien," *Paideuma, Mitteilungen zur Kulturkunde*, Vol. V, No. 6, pp. 236–251.

1954 "Les plus anciennes civilisations d'éleveurs des steppes d'Asie centrale," *Cahiers d'Histoire Mondiale*, Vol. I, No. 4, pp. 760–783. Paris: Librairie des Méridiens.

Karve, Irawati

1953 *Kinship Organisation in India* (Deccan College Monograph Series: 11). Poona: Deccan College Post-Graduate and Research Institute. 304 pp.

Kelly, Isabel and Palerm, Angel

1952 *The Tajin Totonac. Part I: History, Subsistence, Shelter, and Technology* (Smithsonian Institution, Institute of Social Anthropology, Publ. No. 13). Washington, D. C. 369 pp.

Kern, Fritz
1953 *Der Beginn der Weltgeschichte* (Sammlung Dalp, Vol. 60). Bern: Francke Verlag. 280 pp.
Koppers, W.
1952 "Der historische Gedanke in Ethnologie und Prehistorie," *Wiener Beiträge zur Kulturgeschichte und Linguistik*, Vol. IX, pp. 11–65.
1953 "Zusammenarbeit von Ethnologie und Prähistorie,"*Zeitschrift fur Ethnologie*, Vol. 78, pp. 1-16.
1954 *Eine Würdigung des wissenschaftlichen Lebenswerkes von Prof. P. W. Schmidt und seine Bedeutung für die Amerikanistik* (Paper read at the XXXIst International Congress of Americanists at São Paulo on 27 August).
Kroeber, A. L. and Kluckhohn, Clyde
1952 *Culture. A Critical Review of Concepts and Definitions* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XLVII, No. 1). 223 pp.
Leach, E. R.
1954 *Political Systems of Highland Burma. A Study of Kachin Social Structure.* London: G. Bell & Sons, Ltd. 324 pp.
Lehmann, H.
1953 *Les civilisations précolombiennes.* Paris: Presses Universitaires de France. 128 pp.
Lesser, Alexander
1952 "Evolution in Social Anthropology," *Southwestern Journal of Anthropology*, Vol. 8, pp. 134–146.
Lévi-Strauss, C.
1952a "La Notion d'Archaïsme en Ethnologie," *Cahiers Internationaux de Sociologie*, Vol. XII, pp. 3–26.
1952b *Race and History*. Paris: UNESCO. 50 pp.
Lingat, Robert
1952 *Les Régimes Matrimoniaux du Sud-Est de l'Asie. Essai de droit comparé indochinois* Tome I. *Les Régimes Traditionnels.* (Publications de l'Ecole Française d'Extrême Orient, Vol. XXXIV). Paris: E. de Boccard. 176 pp.
Lot-Falck, Eveline
1953 *Les rites de chasse chez les peuples sibériens* ('L'Espece humaine' collection). Paris: Gallimard. 232 pp.
Lowie, R. H.
1953 "Ethnography, Cultural and Social Anthropology," *American Anthropologist*, Vol. 55, No. 4, pp. 527–534.
Macdonald, A. W.
1953 "Juggernaut Reconstruit," *Journal Asiatique*, Vol. CCXL, No. 4, pp. 487–528.
Mandelbaum, D.
1953 "On the Study of National Character," *American Anthropologist*, Vol. 55, No. 2, Part I, pp. 174–187.
Marin, Louis
1952 "Les études ethniques en 1950. La nature de leur object et leur propre nature. Leurs relations avec les autres études portant sur l'homme. L'état de leurs méthodes," *L'Ethnographie*, No. 47, pp. 3–70.
Maringer, J.
1952 *De Godsdienst der Praehistorie.* Roermond en Maaseik: Romen & Zonen. 267 pp.
Meggers, Betty J.
1954 "Environmental Limitation on the Development of Culture," *American Anthropologist*, Vol. 56, Part I, No. 5, pp. 801–824.
Menghin, O.
1952 "Urgeschichtliche Grundfragen," *Historia Mundi*, Vol. I, pp. 229–258. Bern: Francke Verlag.
Meyerowitz, Eva L. R.
1951 *The Sacred State of the Akan.* London: Faber & Faber. 208 pp.
1952 *Akan Traditions of Origin.* London: Faber & Faber. 149 pp.

Miner, H.

1953 *The Primitive City of Timbuctoo.* Princeton: Princeton University Press. 297 pp.

Narr, K. J.

1953 "Zur Frage der altpaläolithischen Kulturkreise," *Anthropos*, Vol. 48, pp. 773–794.

Nippold, W.

1954 *Die Anfänge des Eigentums bei den Naturvölkern und die Entstehung des Privateigentums.* 'S-Gravenhage: Monton & Co. 94 pp.

Phillips, Philip and Willey, G. R.

1953 "Method and Theory in American Archaeology: An Operational Basis for Culture-Historical Integration," *American Anthropologist*, Vol. 55, No. 5, Part I, pp. 615–633.

Pittioni, R.

1952 *Vom geistigen Menschenbild der Urzeit.* Vienna: Franz Deuticke. 134 pp.

Polhausen, Henn

1954 *Das Wanderhirtentum und seine Vorstufen. Eine ethnographisch-geographische Studie zur Entwicklung der Eingeborenenwirtschaft* (Kulturgeschichtliche Forschungen, Vol. 4). Braunschweig: Albert Limbach Verlag. 176 pp.

Redfield, R.

1953 *The Primitive World and Its Transformations.* Ithaca, N. Y.: Cornell University Press. 185 pp.

Riesenfeld, Alphonse

1952 "Was there a Palaeolithic Period in Melanesia?," *Anthropos*, Vol. 47, pp. 405–441.

Rosenstiel, Annette

1954 "Historical Perspective and the Study of Melanesian Culture," *Oceania*, Vol. XXIV, No. 3, pp. 172–189.

Ryan, B.

1953 *Caste in Modern Ceylon: The Sinhalese System in Transition.* New Brunswick, N. J.: Rutgers University Press. 371 pp.

Schapera, I.

1952 *The Ethnic Composition of Tswana Tribes* (Monographs on Social Anthropology, No. 11). London: London School of Economics and Political Science. 133 pp.

Schebesta, P.

1952a *Die Negrito Asiens* (Vol. I. Studia Instituti Anthropos). Vienna-Mödling: St. Gabriel Verlag. 496 pp.

1952b *Les pygmées du Congo belge.* Brussels: Institut Royal Colonial Belge. 432 pp.

1954 "Das Problem des Urmonotheismus, Kritik einer Kritik," *Anthropos*, Vol. 49, pp. 689–697.

Schmidt, Wilhelm

1952a "Die Urkulturen: Ältere Jagd- und Sammel-stufe," *Historia Mundi*, Vol. I, pp. 375–501. Bern: Francke Verlag.

1952b "Die Weltzeitalter des Popol Vuh als Schichtung der Maya Kultur," *Anthropos*, Vol. 47, pp. 561–586.

1952c *Der Ursprung der Gottesidee.* Vol. X. *Die Religionen der Hirtenvölker IV. Die Asiatischen Hirtenvölker.* Münster i.W: Aschendorflsche Verlagsbuchhandlung. 864 pp.

1954 *Der Ursprung der Gottesidee.* Vol. XI. *Die Religionen der Hirtenvölker V. Die Asiatischen Hirtenvölker.* Münster i.W: Aschendorflsche Verlagsbuchhandlung. 734 pp.

Schmidt, Wilhelm and Koppers, Wilhelm

1924 *Volker und Kulturen* (Der Mensch Aller Zeiten Series, Vol. III). Regensburg, Germany: Habbel. 693 pp.

Schwidetzky, Ilse

1954 *Das Problem des Völkertodes. Eine Studie zur historischen Bevölkerungsbiologie.* Stuttgart: F. Enke. 165 pp.

Singer, Charles; Holmyard, E. J.; and Hall, A. R. (eds.)

1954 *A History of Technology: Vol. I, From Early Times to the Fall of Ancient Empires.* Oxford: Clarendon Press. 827 pp.

Spencer, Robert F.

1954 "The Humanities in Cultural Anthropology," pp. 126–144 in *Method and Perspective in Anthropology.* Minneapolis: University of Minnesota Press. 323 pp.

SPENCER, ROBERT F. (ed.)
1954 *Method and Perspective in Anthropology*. Papers in honor of W. D. Wallis. Minneapolis: University of Minnesota Press. 323 pp.

SRINIVAS, M. N.
1952 *Religion and Society among the Coorgs of South India*. Oxford: Oxford University Press. 267 pp.

WALES, H. G. QUARITCH
1953 *The Mountain of God: A Study in Early Religion and Kingship*. London: Stephen Austin and Sons, Ltd. 174 pp.

WEDEL, W. R.
1953 "Some Aspects of Human Ecology in the Central Plains," *American Anthropologist*, Vol. 55, Part 4, pp. 499–514.

WELTFISH, GENE
1953 *The Origins of Art*. Indianapolis, New York: The Bobbs-Merrill Company, Inc. 300 pp.

WESTERMANN, D.
1952 *Geschichte Afrikas. Staatenbildungen südlich der Sahara*. Köln: Greven Verlag. 492 pp.

WIENS, HAROLD J.
1954 *China's March toward the Tropics*. A discussion of the southward penetration of China's culture, peoples and political control in relation to the non-Han Chinese peoples of South China and in the perspective of historical and cultural geography. Hamden, Conn.: The Shoe-String Press. 441 pp.

WILLEY, GORDON R.
1953 "A Pattern of Diffusion Acculturation," *Southwestern Journal of Anthropology*, Vol. 9, pp. 369–384.

ZEUNER, F. E.
1954 "Domestication of Animals," pp. 327–352 in Singer, C. *et al.* (eds.), *History of Technology: Vol. I, From Early Times to the Fall of Ancient Empires*. Oxford: Clarendon Press. 827 pp.

Diffusion: Transmission and Acceptance

WILHELM KOPPERS

Dr. Koppers is Professor of Ethnology (Völkerkunde) and President of the Institute of Ethnology in the University of Vienna. He is a member of the Austrian Academy of Sciences. Some of his many publications are: Die Bhil in Zentralindien, 1948; Primitive Man and His World Picture, 1952; and "Der historische Gedanke in Ethnologie und Prähistorie," 1952.

THE HISTORICAL CHARACTER OF ETHNOLOGY

DIFFUSION is one of the fundamental phenomena of cultural life, a phenomenon concerning the history of culture. This implies that the present investigation will deal with the historical aspect only of what in Anglo-Saxon countries is termed "cultural anthropology."

History has been defined as "the knowledge of the socially important developments in the world of man and their evolution."[1] It is hardly necessary to say that evolution, thus understood, is very different from the organic evolution of natural history and that it means evolution due to human action and to the unfolding of all that the spirit of man has devised and the power of man has created. Evolution, thus defined, belongs to the realm of history. Are historically minded ethnologists justified in claiming the same principle for their own field? In other words: are the primitive tribes, the special subject of ethnology, comparable to civilized peoples to the extent that historical ethnology may be linked to history as usually understood?

It is interesting to learn what a historian, like E. Bernheim, who specialized in the methods of history, thought about the matter. According to him (1908, pp. 45 ff.) primitive peoples, too, should be a subject of history. There are no peoples without history.

> "Die Identität der Menschennatur ist das Grundaxiom jeder historischen Erkenntnis. Denn in der Tat, gäbe es oder hätte es je gegeben ein Volk oder ein Individuum, das in anderer Logik dächte als wir, dem Hass nicht Hass und Liebe nicht Liebe wäre, so würde uns die Geschichte desselben noch unzugänglicher sein als die Begebenheiten in einem Bienenstock." [2]

These remarks, made half a century ago, have been fully confirmed by ethnological research. Today, the role of the individual personality in primitive societies is generally recognized.[3] This applies even to the most primitive hunters and food-gatherers, though among them the effectiveness of personal initiative is necessarily restricted by the small size of their bands. It is significant that Levy-Bruhl, who in 1910 pronounced his theory of "pre-logic thinking" among primitives, thirty years later felt bound to recant.[4] Mühlmann's recent attempt (1954, p. 165) to save "primitivity" (das Primitive) as a distinctive attribute of the older stages of human development will hardly meet with approval.

The intentional use of fire and the presence of stone tools indicate clearly that even the most ancient men known to us were fully human. It is impossible to assume that the makers of those tools were creatures without the power of speech, without family, and without any trace of spiritual culture. Obviously, like the primitives of today, they were fully in possession of the human mental equipment. Therefore they belong, in principle at least, to the subject of history.[5] This is being more and more recognized, as was shown on the occasion of the Wenner-Gren Foundation's International Symposium on Anthropology held in New York in 1952.

---

[1] Feder, A. L., 1943, p. 9.

[2] Bernheim, E., 1908, p. 192.

[3] Koppers, W., 1928, pp. 249-265.

[4] Leenhardt, M., 1949.

It is in the same sense that K. J. Narr (1953, pp. 341–355), concludes his important study, "Menschwerdung und älteste Kultur" with the words (p. 355):

> "Als Plattform für alle weiterführenden Hypothesen werden wir also die ältesten sicheren Zeugnisse der Werkzeugherstellung, des Feuergebrauches und der Grosswildjagd ansehen dürfen. Sie mögen auf den ersten Blick als Quellen psychologischer Erkenntnisse nur allzu dürftig erscheinen, sprechen aber doch deutlich von kausalem Denkvermögen, bewusster Zielsetzung, konstruktiver Einbildungskraft. Setzung spezifischer Beziehungen, Abstraktionsfähigkeit, Weltgeöffnetheit, Gemeinschaftsleben und Sprache. Ihre gegenseitigen Beziehungen und Verknüpfungen lassen uns auch den 'Homo sapiens' (in wörtlicher, nicht zoologisch-systematischer Bedeutung des Wortes) (und den 'Homo faber'), das 'Zóon politikón' und den 'Homo loquens' als Aspekte der spezifisch menschlichen Geistigkeit erscheinen, die nicht ohneweiteres von dieser wesensmässigen Ganzheit einzeln losgelöst werden können. Von einer Entstehung der geistigen Grundlagen des Menschen im Sinne langsamer, schrittweiser Entwicklung kann die Urgeschichtsforschung mit ihren Mitteln nichts feststellen. Damit ist eine solche evolutionistisch-materialistische Theorie natürlich nicht widerlegt; aber wer sie vertritt, muss sich darüber klar sein, dass auch er damit eine metaphysische Stellungnahme vollzieht, eine geistige Entscheidung, deren Last und Verantwortung archäologische Forschungen ihm nicht abnehmen können."

The fundamental principle was clearly expressed by a prominent historian, Fr. Kern, who wrote (1952, p. 13):

> "Man kann die volle menschliche Natur aus der Geschichte nicht erkennen, wenn man die Naturvölker auslässt. Sobald man diese breite Basis aller menschlichen Geschichte berücksichtigt, stösst man auf eine Historia perennis der menschlichen Substanz."

In fact, there is no reason for not linking ethnology and prehistory to history proper. This has not always been recognized. Ideological and practical reasons stood in the way. The difficulties came from both sides. Historians, as for instance E. Meyer, rejected the inclusion of primitive peoples in history by reason of their "not having become historically effective."[6] On the other hand, ethnology had drifted into a kind of evolutionism borrowed from the natural sciences and got itself ipso facto into contrast to history. It was the historian F. Graebner who helped ethnology to overcome this dilemma by applying to it the principles and methods of history.[7]

The difference between history proper and ethnology is merely due to the different character of their sources, history being based mainly on written sources, while ethnology has to rely almost entirely on the study of cultures and culture traits. To the general public, "history" means political history, wars, treaties, and other individual events, and the actions of known personalities. In view of the lack of written evidence, ethnology and prehistoric archeology have to renounce all this, save in a few exceptional instances. They are concerned almost exclusively with culture. With regard to culture, they differ from history proper not in essence, but only in lacking written sources.

Ethnology deals in general with contemporary cultures. However, it is obvious that the various cultures and culture traits differ in age. Are we able to determine their relative chronology, the regions where they originated, and their causal interrelations? It is here that the study of diffusion will have to play its decisive role.

PARALLELS AND CRITERIA OF RELATION

Historically directed ethnology will have to rely on cultural parallels for a starting point. We speak of such parallels if we meet identical or similar cultural phenomena in different parts of the world. In any given case, the question whether or not we are faced with true relation will depend on the degree of conformity and the number of "parallel" traits, i.e., on the "criteria of form and of quantity." Whenever this question is to be answered in the affirmative, this will have to be considered as a proof of diffusion. It will provide a means of determining the presence of relation, be it direct or indirect, and eventually may also yield a clue for the chronology of the cultures concerned.

---

[5] Kraft, G., 1942; see also Koppers, W., 1952a.

[6] For a similar view, see Muhlmann, W. E., 1954, pp. 165–177.

[7] Koppers, W., 1952b, pp. 11–65.

The matter will best be clarified by presenting a special case, that of Australia. In this we shall rely largely on Frederic D. McCarthy's article (1953) on "The Oceanic and Indonesian Affiliations of Australian Aboriginal Culture."

FIFTY YEARS OF RESEARCH ON DIFFUSION IN AUSTRALIA

McCarthy's investigations have shown that all theories concerning Australia, as far as they were based on the old evolutionist idea of the psychic unity of mankind, will have to be abandoned.

> "One of the earliest interpretations of the status of Aboriginal culture was that of Sir W. Baldwin Spencer, an independent evolutionist, who from 1899 onwards, supported by other Melbourne writers, claimed that the Aborigines had developed everything necessary to their well being, considering their wants and the materials available, unaided from other source. This group also believed that all local cultures in Australia are due to local causes, and that any attempt to compare the Aboriginal culture with those of the Old World, with races subjected to periodic invasions of different cultures or in contact with higher or lower civilizations, will lead to error. The explanation of the composition of Aboriginal culture, in all its aspects, is here wrongly attributed to the principle of local causation and independent evolution, as the discussion below will reveal. Professor Porteous, in 1931, claimed that the interior of Australia is the cultural centre but this claim is untenable in the light of present-day knowledge." [8]

This also implies the rejection of E. Durkheim's well-known theory concerning the original and primordial character of Central-Australian Totemism.

In contrast to the representatives of the old evolutionist school, McCarthy cites the "diffusionists," beginning with F. Graebner. Of course, neither Graebner nor any one else has been able to solve all the problems concerning the Australian aborigines, but at least a good start has been made.

> "On the other hand, an important group of diffusionists have accumulated convincing evidence of the importance of external influences on Aboriginal culture. Dr. Graebner, in 1905, pointed out that there are several related strata or levels of culture in Australia and Melanesia, and that traits from western Papua form an ancient diffusion into Australia where they were pushed into the extreme west by those from eastern Papua." [9]

McCarthy then lists Rivers, Thorpe, Davidson, and others who continued research along the lines inaugurated by Graebner. It is rather surprising that he omitted to mention Wilhelm Schmidt. After all, none other contributed more to elucidate the linguistic, sociological, and religious situation of the Australian aborigines.

> "In my own papers on the subject, from 1939 onwards, I have stressed the importance of diffusion, local variation and trade in the development of Aboriginal culture as we know it today." [10]

Development of research in this direction was furthered by the inclusion of prehistoric archeology. Here, too, McCarthy's point of view is definitely historical.

> "The Melbourne group led by Spencer, followed by Kenyon, Mahony, Mann and Mitchell, from 1899 to date, accept implicitly the hypotheses that (1), the nature of a stone implement, whether it be ground, chipped or flaked, depends primarily on the nature of the stone available in any particular district, and (2), that there is no such thing in Australia as distinct stages of culture or time periods corresponding to the Eolithic, Palaeolithic or Neolithic. I have criticized this attempted explanation in other

---

[8] McCarthy, 1953, p. 245.

[9] *Ibid.*, p. 245.

[10] *Ibid.*, p. 246.

papers, suffice it to say that such an approach cannot solve the problems of Australian prehistory because current research has demonstrated that many relationships exist between Australian, Indonesian and Oceanic lithic cultures, and the materialistic interpretation, or local causation, must now give way to a broader cultural interpretation in which techniques and diffusion are important factors. The history of Australian axe-types, for instance, is not a local problem, but is an integral part of the history of such implements in the Oceanic region generally just as are those of New Guinea and New Zealand. Australian axes advanced as far as the round and lenticular transverse sections, but in Oceania they developed more fully with the quadrangular and hog-back types, among others. This latter approach is borne out by the establishment of twelve prehistoric cultures, by the study of their geological locale and the excavation of cave floors, in South Australia, New South Wales and Arnhem Land, but their relationships in point of age and time are not yet determined. These cultures represent two main groups of inland and coastal sequences."[11]

"It is now believed that the Eloueran culture of the coast (Eloueran = one of the coastal groups of south-eastern Australia) and tableland region, the Murundian of the Interior, the Oenpellian and Milingimbian (an axe culture) of Arnhem Land, are contemporaneous cultures which existed at the time of European occupation, and that the others extend back into the Mesolithic and possibly late Palaeolithic periods. It has not been possible to associate many of the economic, social, religious and other traits in Aboriginal life with the stone, bone and shell implements, rock paintings and engravings, and a few other items, of which the prehistoric cultures consist."[12]

The last sentence confirms a principle which we (Koppers, 1953/54, p. 56; also 1931, p. 231) stated more than twenty years ago, i.e. that material culture, social systems, and religious beliefs need not spread as one complex.

Turning to the question of the origin of Australian cultures, McCarthy states (p. 248):

"It is becoming more and more apparent that the sources from which Aboriginal culture has been developed lie ultimately in Asia. Professor Elkin has linked some of the psychic practices with those of Tibet. Hindu culture, which penetrated Indonesia so deeply, appears to have reached Australia in the music of Arnhem Land and in other minor ways."

Recently E. Drobec (1952, p. 305) pointed out that the medical notions and practices of Australian aborigines show definite connections with those of aboriginal tribes in India.

"We have no early or middle Pleistocene cultures, and the typological resemblances between certain biface hand-axes in the Gamberian culture of South Australia and the middle Pleistocene Patjitanian culture of Java (which forms part of Movius's chopping chopper-tool culture of south-east Asia) cannot be accepted as evidence of relationships between the two cultures."[13]

Since in this case typology is not unequivocally convincing, McCarthy rightly refrains from expressing a definite opinion. He does not deny the possibility of connection, but leaves the question open. Future research may possibly change the aspect of the problem. In any case McCarthy does not allow himself to be trapped into the premature conclusion, so often met with, that since connection cannot yet be proved, independent invention must be assumed.[14]

"The most archaic traces of culture in Australia comprise a few Palaeolithic stone-working techniques and types in our prehistoric cultures, such as the faceted and plain-butt knapping techniques, better known as the Clactonian and Levalloisian, and the stone points and flake-fabricators in our short-blade industries, but we do not know when they came to Australia. Another early relationship is that of pebble-choppers chipped on one side, with cores and hammerstones, which are found in Australia as the Kartan culture and south-east Asia and Indonesia as the Hoabinhien I culture. They belong to the late Pleistocene and Mesolithic periods between five and over ten thousand years ago."[15]

Following Graebner's line of thought, McCarthy says (p. 252) with regard to the culture of the first Australians:

"Although we cannot define the original culture as that occurring in either south-western or

---

[11] *Ibid.*, p. 246.

[12] *Ibid.*, pp. 247 ff.

[13] McCarthy, 1953, p. 248.

[14] Koppers, W., 1952b, p. 24.

[15] McCarthy, 1953, p. 249.

> south-eastern Australia because diffusion has affected both regions to a limited degree, it is apparent that the relatively primitive culture of the south-western tribes is not far removed from a culture representing an admixture of Tasmanian and early Aboriginal elements. Many factors enter into an analysis of a problem of this kind, including the origin and diffusion of various customs, migrations of people, invention and local variation, and external affiliations, all of which cannot be discussed in detail here."

Here again McCarthy confirms that Graebner, Schmidt, and others have been fundamentally right in assuming that, apart from Tasmania and the little known Southwest, the relatively oldest culture is to be found in the southeastern part of the Australian continent. Moreover, McCarthy realizes that prehistoric data alone do not suffice to solve this problem, and that it is essential to co-ordinate the ethnologic, linguistic, and anthropological facts. J. Haekel's recently published article (1954) on ethnologic and prehistoric problems of Australia would seem to meet this request as far as possible under present conditions.

It is interesting to follow the trend of McCarthy's reasoning, based on years of intensive study of the Australian "Avenues of Diffusion."

> "Earlier writers have laid stress upon separate migrations of Aboriginal people to explain the differentiations of culture that exist in Australia, but I do not believe this factor to be as important as the injections or streams of culture traits which passed through a limited number of entry points in Cape York, Arnhem Land and the Kimberleys. In other words, the Aborigines' is not an isolated culture which developed independently as is commonly supposed; it is one that has thrived, in a limited manner, on the continuous progress of Oceanic cultures with their roots in Asia. Thus we can distinguish a very large number of customs among all aspects of Aboriginal culture which have an unbroken distribution from Australia into New Guinea and Melanesia, and some further afield. They include customs which are ancient in Australia's cultural terms, and many others of more recent origin which have a limited distribution in the north and east, and which leave no doubt that they were introduced via Cape York whence they spread over the continent. The avenues of these cultures are obvious." [16]

> "The contact between the Torres Strait islanders and Cape York Aborigines has been long and intimate, as has that between the former and the Daudai-Fly river district Papuans. Physical anthropologists have shown conclusively that Melanesoid physical characters are present in northeastern Queensland and Cape York, and social anthropologists have revealed how deeply initiation and hero-cults, together with carving in the round, from New Guinea and Torres Strait, have penetrated the aboriginal culture in Cape York where the bow and arrow, skin-drum, and other un-Australian paraphernalia are used. The areas of local variation, in the material culture coincide only to a limited extent with the known distributions of languages, forms of social organisation, and physical variations." [17]

Here are the main facts resulting from McCarthy's study of Australian cultural history:

1. A more or less common basis characterized by a hunters' and food-gatherers' economy.
2. Recurrent participation in the development of cultural traits in Melanesia, etc., though the original appropriative economy was not discarded.
3. The cultural aspect as indicated by ethnology and prehistory agrees to a considerable extent with the results of linguistic and somatological research. However, the distribution of elements of material culture does not always coincide with that of languages and social systems.

The cultural relations between Australia and Melanesia are so numerous that McCarthy (pp. 253 ff.) was unable to list them all and refers readers to the special literature on the subject. The following passage is of particular interest.

> "There is a small group of half a dozen traits introduced from Torres Strait into Cape York, and another small group—fish and game nets and netted bags—is present in both Australia and New Guinea but not in Torres Strait. This example of discontinuous distribution does not, in my opinion, negative the probability of a relationship between the Australian and New Guinea occurrences." [18]

McCarthy recognizes that, in this case, the criteria of form and number will not allow of any doubt concerning the relations between the cultural complexes in question, despite the absence of continuity in distribution. In any case he refuses the easy solution of assuming independent origin. How thoroughly convinced he is of the importance of diffusion in Australian cultural history shows in his own words:

---

[16] McCarthy, 1953, pp. 252 ff.

[17] *Ibid.*, p. 253.

[18] *Ibid.*, p. 254.

> "The process of diffusion is an element of Aboriginal culture that has always been active from the earliest times to the present day." [19]

However, McCarthy realizes that diffusion is not all.

> "Apart from diffusion, another very important factor in cultural development is that of local variation caused by the nature and scattered occurrences of raw materials used for making various articles." [20]
>
> "These areas of local variation in the material culture coincide only to a limited extent with the known distribution of languages, forms of social organisation, and physical variations." [21]

As pointed out elsewhere (Koppers, 1952b, p. 33), it is only natural that, given the continuance of a hunters' and food-gatherers' economy, local developments will affect material culture, rather than the respective social systems or religious and mythological notions, although there is no fixed rule in this respect.

McCarthy (1953, p. 257) makes the following significant statement: "Invention, as such, is not a feature of Aboriginal culture." McCarthy attributes this to the Australians' appropriative economy:

> "The stabilisation of their economic and ritual life, the limitation of transport, and the satisfactory efficiency of their material culture, have given the Aborigines little impetus to change their artifacts in any radical fashion." [22]

In the introduction of his article (p.244), McCarthy touches upon the same idea, and though he uses Australia as a typical example, he permits himself to glance toward the general history of mankind.

> "Thus the historical background, conservatism, isolation and environment are among the principal factors which have led the Aborigines to perpetuate their traditionally established semi-nomadic economy. This mode of living is not altogether undesirable, even though it was followed by man for a million years or so before pastoralism and agriculture were developed. It is adaptable to varying environments, and it forces the inhabitants to integrate themselves both economically and ritually more intensively than do both pastoralism and agriculture."

We mention our expression of similar views thirty years ago (Koppers, 1924, pp. 426 ff.).

The final section of McCarthy's paper (p. 258) deals with "Barter and Exchange." Here too, there are no fixed rules or laws.

> ". . . some (traits spread) more quickly than others, but generally speaking, the older traits more extensively."

This was also stressed by Birket-Smith (1953), who emphasizes the non-existence of laws in this respect and the necessity to judge any given case according to its special circumstances.

Concerning the chronological problem, McCarthy says (p. 258):

> "The time-factor in diffusion is an extremely interesting one about which little is known in Australia. The rapid diffusion of the tobacco and smoking complex in Oceania during the past three centuries illustrates how a trait can be absorbed so completely into a culture that it appears on the surface to be a basic or integral custom. It is paralleled in Australia by the rapid spread of major rituals in the Northern Territory, Arnhem Land, the Kimberleys, and Cape York. Herein, too, is exemplified the manner in which introduced customs either supplant those already practised or are adopted as complementary to the latter. Diffusion is also revealed by the names of objects. There are many tribes in eastern New South Wales which denoted the spear-thrower by *wommara* or a variation of this name indicating the line of diffusion of both the implement and its name. Many other examples of this type of diffusion may be found in Aboriginal culture."

Concluding (p. 258), McCarthy stresses the fundamental and decisive importance of research on diffusion for the solution of the problems of Australian culture.

---

[19] *Ibid.*, p. 255.
[20] *Ibid.*, p. 256.
[21] *Ibid.*, pp. 256 ff.
[22] *Ibid.*, p. 257.

> "It is obvious from the above discussion that the cultural history and affiliations of aboriginal Australia constitute a problem of some complexity. The evidence for believing that culture infusion has been considerable is so overwhelming that the point can no longer be disputed."

Of course McCarthy (pp. 258–259) realizes that we are not yet able to solve all the relevant problems.

> "We can up to a point distinguish the groups of traits, or the culture of the various movements of people which entered or made contact with Australia, including the Tasmanians, one or more waves of Australians, the Melanesians and Indonesians—but the antiquity of these movements is unknown. It has not yet been proved that it followed the classical chronology of Tasmanians, Australians, Melanesians, Polynesians and Indonesians into the Oceanic region, but it is apparent that the Australian problem is an integral part of the Oceanic one."

DIFFUSION IN A HIGH CIVILIZATION

Obviously, research on diffusion will yield the best results when written historical sources are available. It was a happy inspiration that prompted Margaret T. Hodgen (1950, 1952), to study the role of diffusion and acculturation in the history of English civilization. She deals with the whole period from about 2500 B. C. to the beginning of the twentieth century A. D. The results are of genuine interest and should be given full attention by ethnologists and prehistorians.

It is surprising to see how many innovations were introduced into England by diffusion from abroad and were eventually fused into local culture. Lack of space here forbids citation of details, tempting though it is. Separate chapters deal with innovations as known by historical documents and their integration into the social surroundings; with the process of diffusion; and finally with the role which historical events, particularly the immigration of new ethnic groups, played in the introduction of new techniques. Miss Hodgen rejects all attempts "to discover and describe the natural laws of change" by applying the methods of the natural sciences to the study of culture.

> "Hence, when students of man adopt the procedure of natural science, when they elect with natural science to discover or describe the natural laws of change, and when, like natural scientists they abstract from the historical and the dated, they at one and the same time ignore that which is most characteristic of man, as a human and historical being." [23]

However, we can hardly agree with Miss Hodgen's notion that the lack of written sources does not permit definite conclusions about diffusion and acculturation in prehistoric times. In this respect we rather side with the opinions of Kroeber (1948, p. 702) and of Childe (1951, p. 13 ff.). We may also refer to the case of Australia as discussed above. True, Herskovits considers the dynamics of diffusion to be the sole legitimate subject of ethnologic research on this matter. This is no doubt too one-sided. Of course, whenever it is possible, we must attempt to establish, not only the fact of diffusion, but also the reason why it took place and the way in which it was effected. In this, Herskovits is right. Diffusion never consists of the mere mechanical introduction of new traits. There is always selection and integration into the existing cultural tradition. However, where there are no written sources and the process cannot actually be observed, the knowledge of the fact itself will still retain its value.

Miss Hodgen (1952, pp. 118 ff.) does not do full justice to Graebner in simply linking him to Elliot Smith and accusing him of having adhered to *a priori* assumptions. She obviously knows his theories only from second hand sources and probably would judge him differently had she read some of his work in the original. Nevertheless, this shall not impair the pleasure we took in reading her book. Miss Hodgen herself is well aware of the service she rendered to ethnology and prehistory.

> ". . . and undated distribution of primitive traits, now attributed by anthropologists to diffusion on slender or undated evidence, would receive some measure of dated corroboration. Its

---

[23] Hodgen, Margaret T., 1952, p. 29.

confirmation in even one inquiry, that has dated distributions as a problem and other dated resources for eliciting the steps and conditions of a process of distribution, would be added testimony for its adequacy in fields of humanistic study where dated evidence is unobtainable."[24]

THE DIFFUSION PROBLEM AS TREATED BY HERSKOVITS, KROEBER, LOWIE, CHILDE, AND WHITE

In his book, *Man and His Works* (1948), Herskovits repeatedly touches upon the question of diffusion. In this connection he also refers to the Vienna School of Ethnology. He reproaches us for not giving sufficient attention to the psychological aspects of diffusion, acceptance, and rejection. He admits that our methods suffice to establish the facts of diffusion, but thinks that it fails in answering the "Why." He objects that we do not take into account the psychological background of acceptance or rejection of cultural traits and therefore have nothing to say about cultural dynamics. According to him, our method is but a first step toward the study of culture change. The hypothetical character of the culture historical methods is said (p. 509) to prevent their being accepted as the basis for the analysis of causes, which, after all, should be the ultimate goal of scientific research in this field. Moreover, we are charged (p. 510) with "a mystical approach to the nature of life and human experience." It is difficult to see of what this "mystical approach" consists. All we can do is to say: "Quod gratis asseritur, gratis negatur." Herskovits' reproach that we consider the fact, rather than the "Why" of diffusion would seem to imply, not mysticism, but an excess of sobriety on our part.

Despite all this, we actually agree on numerous and essential points. This applies particularly to the appreciation of the importance of diffusion and the rejection of evolutionism.[25] Herskovits is perfectly right in pointing out (p. 474) that the selective process which always occurs in diffusion furnishes a decisive argument against evolutionist assumptions and constructions. He also rejects functionalism, of whose antihistoric tendencies he does not approve.

Herskovits' special concerns are the problems of acculturation, culture change, and cultural dynamics in general. This may, in part at least, be due to inspirations he received during this study of American Negroes. It is obvious that in this field it will not prove too difficult to discern the reasons why cultural changes are taking place. However, it would be unwarranted were we to remain satisfied with such relatively easy cases. The historically minded ethnologist wishes to probe into the greater depths of time, into realms where the determination of the fact of diffusion is still feasible, but the reason why it happened is no longer accessible. Herskovits himself cites, as such an instance, Hallowell's study of bear ceremonialism.

> "Yet *how* all this happened, *when* it occurred, *where* it originated, and *by whom* the change was brought about, in such studies remain only for conjecture."[26]

We may well ask whether the proof of the mere fact of diffusion is not in itself of considerable import. Graebner devotes a whole chapter of his *Methode der Ethnologie* to the question of causality in which, after all, every historical investigation should culminate. However, if there is no, or only insufficient, indication of the causes, the fact itself still will retain its value.

As for the reproach of neglecting "cultural reality," we quote Graebner's words, "Ich suche tastend nach Spuren."

It is inevitable that in such a search for traces, cultural reality cannot always be taken into consideration in its full scope. But, as Graebner said, better no house at all, than a house of cards.

Herskovits correctly recognized (p. 509) the background of the historical character of ethnology in Central Europe.

> "In consonance with the intellectual traditions of Central Europe, the insistence on ultimate ends and values of research marks this school off from the more pragmatic approaches of the other groups."

---

[24] *Ibid.*, p. 126.

[25] Herskovits, M., 1948, pp. 525, 539, 637.

[26] *Ibid.*, p. 526.

We need only to add that this is the natural result of the close relations between ethnology and history proper in Central Europe. Herskovits' inclination towards "pragmatic approaches" is obviously connected with his views concerning "the laws" of history. Although realizing the difficulties in this respect, he wishes (pp. 608 ff.) to save of those laws as much as possible, more than most European historians would be prepared to concede. Might that not be a residue of the former thinking along the lines of the natural sciences? This might explain Herskovits' doubts concerning the capability of the culture historical school.

> ". . . (the culture-historical school) can scarcely be said to have laid the ground for that analysis of cultural causation which must ultimately be the objective of the scientific study of the nature of culture or of culture change." [27]

On the occasion of the Wenner-Gren Foundation's 1952 International Symposium on Anthropology in New York, A. L. Kroeber laid such excessive emphasis on the unity of what in the United States is termed "anthropology" that we could not but raise objections against his statements. In stressing the autonomous character of cultural history we referred to Kroeber's own views as expressed in his *Anthropology* (1948). In this book he makes an unequivocal distinction between biological and cultural anthropology. With regard to the problems of diffusion he takes the same view (pp. 411 ff.) as the culture historians of Europe. This applies also to his not admitting (pp. 415 ff.) the existence of any "laws" in the process of diffusion. From the fact that diffusion of culture traits can be proved to have taken place in historic times he concludes (p. 702) that the same must necessarily apply to prehistoric periods. He admits of course that not everything can be explained by diffusion alone. However, while the study of diffusion offers fairly reliable results "the parallelistic opinion leaves the facts both unexplained and unrelated."

Kroeber does not seem to agree with the objection that Herskovits raised against certain points of the culture historical methods. According to him (p. 578), it is for the psychologist to study the mechanism of learning and imitation implied in diffusion. The anthropologist (i.e., the ethnologist), however, deals with *what* is being learned (or not learned), that is, the culture, its structure, its patterns, the interrelations between cultures, and of course cultural history. Kroeber does not admit any difference between culture history and cultural evolution. He is right in this: in the humanities history and evolution are indeed identical.

In his *History of Ethnological Theory* (1937), Lowie refers repeatedly to the problem of diffusion. In appraising Lowie's criticism of the culture historical school we must not forget that his book was published eighteen years ago and that much has changed since then. Since Lowie's views have been widely adopted it may not be out of place to rectify some points. He thinks (p. 178) that "Independent origins, while abstractly conceivable are therefore almost always ignored, though Schmidt and Koppers explicitly except the conical roof of Asiatic nomads and of higher hunters."

Hereto, we can only remark that the "Kulturkreis" theory has been abandoned for quite some time and that considerable progress has been made in the application of the criteria of intercultural relations. The same applies to Lowie's remark that the German diffusionists ". . . mistake analogies for homologous features," a remark which he exemplifies by pointing out (p. 184) the various possible ways in which duel systems may have originated in Australia and in America. It is obvious and has long since been recognized by culture historians that such pitfalls and possible sources of error must be avoided.

Lowie's opinion, according to which there is an evolutionist undertone in W. Schmidt's system, is hardly justified. He seems to have been impressed unduly by a purely superficial similarity with the old evolutionist ideas. Schmidt was deeply convinced of the historical character of his theories. It is really not possible to charge him with having adhered to evolutionism in its true sense.

---

[27] *Ibid.*, p. 514.

Among the contemporary prehistorians V. Gordon Childe is more or less a protagonist of historical materialism. However, there can be no doubt but that he ranks among the most outstanding scholars of his field. Therefore it is of particular interest to learn of his attitude with regard to the problems of diffusion.

According to Childe (1951, pp. 12 ff.), diffusionists believe that "savages" are without initiative and ascribe all cultural development to a "chosen people." Obviously, this can only refer to the School of Elliot Smith and Perry. He considers that there need be no conflict between evolution and diffusion. Evolution has nothing to do with the question *why* cultures change—this being a concern of history—, but *how* they change. Here, Childe gets into conflict with Herskovits, but also with almost all historians as well. The latter aspire to both the "how" and the "why." Nevertheless, we note that Childe acknowledges the role of history together with that of evolution. Although much of his own work is definitely of a historical character, he does not renounce the tenets of evolutionism. This causes certain contradictions in his ideas. In this respect he shows a certain affinity to Leslie A. White.

Of course, we agree with Childe when he says (pp. 13–14) that diffusion is a fact, that it can be proved for material culture ever since the Early Paleolithic, and that diffusion of ideas also occurs. We no less agree with him on the difference between social and organic evolution and with his conclusion (p. 179) that cultural evolution is a rational and intelligible process.

Leslie A. White hardly touches upon the problem of diffusion. As does Childe, he attempts (1949, pp. 229 ff.) to separate history and evolution. White, who negates the free will of man, contests Schmidt, as well as Childe—the latter because he still believes (pp. 230 ff.) that cultural change can be intentionally initiated, controlled, or eventually rejected. White's system, which he calls "Culturology," definitely is oriented toward the natural sciences. He simply calls the driving forces of culture "energy." His "culturology" has not incorrectly been called a kind of "deification" of culture.

CONCLUSIONS

Summarizing our results, we may venture to make the following statements.

1. We have seen that man was from the very beginning fully human, possessing and creating culture. Therefore history in its wider meaning comprises the entire period from the appearance of the human race to the present day.

2. No serious scholar will deny the reality of diffusion, transmission, and acceptance. Childe even traces them as far back as the beginning of the Paleolithic.

3. The principle diffusion is particularly important in ethnology and prehistory. This, of couse, is due to the fact that they lack written sources and therefore are forced to rely on the comparative study of culture traits for the purpose of establishing the areal, chronological, and causal factors.

4. Comprehension and explanation of diffusional phenomena will have to use the well-known criteria of culture relations, the criteria of form, of quantity, etc. It certainly would not meet the facts should we speak of indications only as Mühlmann does (1954, p. 173) and not of history in the proper sense of the word. The cultural elements in question represent evidence on their own, as well as on grounds of their established interconnections; they cannot be discarded as mere indications, but actually represent some part at least of history.

5. Diffusion will not suffice to explain every historical development. Culture traits alone will never be able fully to substitute for reliable written evidence, but they will always furnish a valuable supplement. Should no written sources be available, it would be unreasonable were we to refrain from considering and interpreting archeological or ethnological facts. This the more so since the earliest periods of mankind, in some respects the most important in human history, lacked any written records.

Better incomplete knowledge than none at all.

6. Diffusional research will have to be based primarily on cultural parallels. Whenever these do not yet fully suffice to prove the existence of genuine relation, premature conclusions as to independent origin are nevertheless inadmissible. In general, we simply have to leave the question undecided.

7. The cases of Australia and England have given us a convincing demonstration of the vital part diffusion plays in the life of peoples and the spread of culture. We have seen that in this respect there is no essential difference between primitive cultures and high civilizations. At the same time, Margaret Hodgen's study of England has shown us how much can be learned from written sources for the deeper understanding of the diffusional process.

8. It is of fundamental importance that there are no fixed laws in diffusion, either in transmission, or in acceptance or rejection. Diffusion is always accompanied by some kind of selection and modification, and the apparently arbitrary ways in which these occur frequently have puzzled ethnologists.

9. Since there are no laws governing diffusion, there is no easy and infallible means to discover whether or not it took place. Mere theoretical deductions will be of no help. Every case will have to be judged on its own merit. Full command of ethnological methods, a thorough knowledge of the relevant facts, and, above all, the capacity of coordination will be indispensible.

10. This concerns also the much discussed problem of cultural relations between the Old World and America. The best method in this case will be to start on the younger and more differentiated culture complexes since they are less disintegrated than the older and more primitive and, moreover, offer more convincing evidence for comparison. This was already realized by Graebner (1911, pp. 144 ff.). It is the approach used by Heine-Geldern and Ekholm. Above all, I wish to refer to Heine-Geldern's recent paper on the Asiatic origin of South American metallurgy[28] which, in my opinion, will prove a landmark in research on Old and New World cultural relations and on the problem of diffusion in general.

11. As mentioned above, we have to reckon with the eventual stability of culture no less than with diffusion. In this respect too there is no fixed law and every case will have to be considered individually.

12. Even though Graebner's and Schmidt's "Kulturkreise" have rightly been abandoned for quite some time, wholesale rejection of all of their deductions particularly as far as they concern Australia would certainly be going too far. As we have seen, their methods yielded results which still can stand up in face of more recent research. It is significant that Birket-Smith (1953, p. 80) still recommends Graebner's and Schmidt's books on ethnological method.

13. Progress made in recent years is largely due to the systematic combination of ethnologic and prehistoric methods.[29] This also emphasizes the oneness of human history and human culture.

---

[28] Heine-Geldern, Robert, 1954a, pp. 347–423; see also Heine-Geldern, Robert, 1954b; Carter, George F., 1953; Ekholm, Gordon F., 1953.

[29] Koppers, W., 1953, pp. 1–16.

REFERENCES

Bernheim, E.

1908 *Lehrbuch der historischen Methode und der Geschichtsphilosophie.* 5th and 6th ed. Leipzig: Dunker & Humblot. 842 pp.

Birket-Smith, Kaj

1953 pp. 75–81 in Tax, Sol *et al.* (eds.), *An Appraisal of Anthropology Today.* Chicago: University of Chicago Press. 395 pp.

Carter, George F.

1953 "Plants across the Pacific," pp. 62–71 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). 97 pp.

Childe, V. G.
1951 *Social Evolution.* London: Watts & Co. 183 pp.

Drobec, E.
1952 "Heilkunde bei den Eingeborenen Australiens," *Wiener Beiträge zur Kulturgeschichte und Linguistik,* Vol. IX, pp. 280–307.

Ekholm, Gordon F.
1953 "A possible focus of Asiatic influence in the late classic cultures of Mesoamerica," pp. 72–89 in Smith, Marian W. (ed.), *Asia and North America, Transpacific Contacts* (Memoir 9, Society for American Archaeology). 97 pp.

Feder, A. L.
1924 *Lehrbuch der geschichtlichen Methode.* 3rd ed. Regensburg: Kösel & Pustet. 372 pp.

Graebner, Fr.
1911 *Die Methode der Ethnologie.* Heidelberg: Winter. 192 pp.

Haekel, J.
1954 "Ethnologische und prähistorische Probleme Australiens," *Wiener völkerkundliche Mitteilungen,* Vol. II, pp. 66–85.

Heine-Geldern, Robert
1954a "Die asiatische Herkunft der süd-amerikanischen Metalltechnik," *Paideuma,* Vol. 5, pp. 347–423.
1954b "Das Problem vorkolumbischer Beziehungen zwischen Alter und Neuer Welt und seine Bedeutung für die allgemeine Kulturgeschichte," *Anzeiger der Österreichischen Akademie der Wissenschaften, Philos.-histor. Klasse,* Vol. 91, No. 24, pp. 343–357.

Herskovits, M.
1948 *Man and His Works.* New York: Alfred A. Knopf. 678 pp.

Hodgen, Margaret T.
1950 "Similarities and dates distributions," *American Anthropologist,* Vol. 52, No. 4, Part 1, pp. 445–468.
1952 *Change and History* (Viking Fund Publications in Anthropology, No. 18) New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 324 pp.

Kern, Fr. (ed.)
1952 *Historia Mundi.* Bd. I, Bern: Franke. 560 pp.

Koppers, W.
1928 "Individualforschung unter den Primitiven. Im besonderen unter den Yamana auf Feuerland," pp. 249–265 in *W. Schmidt Festschrift.* Wien-Mödling: Anthropos Verlag. 977 pp.
1931 "Review of O. Menghin's *Weltgeschichte der Steinzeit,*" *Anthropos,* Vol. 26, pp. 223–243.
1950 "Lévy-Bruhl und das Ende des 'prä'-logischen Denkens der Primitiven," pp. 1–7 in *Proceedings of the 14th International Congress of Sociology, Rome, 30 August–3 September, 1950,* Vol. IV.
1952a *Primitive Man and His World Picture.* London, New York: Sheed and Ward. 264 pp.
1952b "Der historische Gedanke in Ethnologie und Prähistorie," *Wiener Beiträge zur Kulturgeschichte und Linguistik,* Vol. IX, pp. 11–65.
1953 "Zusammenarbeit von Ethnologie und Prähistorie," *Zeitschrift für Ethnologie,* Vol. 78, pp. 1–16.
1953/54 "The International Symposium on Anthropology. Eine ethnologisch-historische Würdigung," *Mitteilungen der Wiener Anthropologischen Gesellschaft,* Vol. LXXXIII, pp. 40–60.

Koppers, Wilhelm and Schmidt, Wilhelm
1924 *Völker und Kulturen.* Regensburg: Jos. Habbel. 739 pp.

Kraft, G.
1942 *Der Urmensch als Schöpfer. Die geistige Welt der Eiszeitmenschen.* 2nd ed. Tübingen: Dr. M. Matthiesen & Co. 262 pp.

Kroeber, A. L.
1948 *Anthropology.* Rev. ed. New York: Harcourt Brace & Co. 856 pp.

Leenhardt, M.
1949 *Les Carnets de Lucien Lévy-Bruhl.* Paris: Presses Universitaires de France. 257 pp.

LOWIE, ROBERT H.
1937 *The History of Ethnological Theory.* New York: Farrar & Rinehart. 296 pp.
McCARTHY, FREDERICK D.
1953 "The Oceanic and Indonesian Affiliations of Australian Aboriginal Culture," *The Journal of the Polynesian Society,* Vol. 62, No. 3, pp. 243–261.
MÜHLMANN, W. E.
1954 "Ethnologie und Geschichte," *Studium Generale,* Vol. VII, pp. 165–177.
NARR, K. J.
1953 "Menschwerdung und älteste Kultur," *La Nouvelle Clio,* Vol. V, pp. 341–355.
WHITE, LESLIE A.
1949 *The Science of Culture.* New York: Farrar, Straus & Company. 444 pp.

Part Three

Other Considerations of Theory

Part Three:

Other Considerations of Theory

INTRODUCTORY 185

THE CONCEPTS OF "PRIMITIVE" AND "NATIVE" IN ANTHROPOLOGY
Edward P. Dozier 187

THE STUDY OF COMPLEX CIVILIZATIONS
David G. Mandelbaum 203

UNIVERSALITY AND VARIATION IN HUMAN NATURE
W. W. Howells 227

FUNCTION
Raymond Firth 237

COMPARISONS IN CULTURAL ANTHROPOLOGY
Oscar Lewis 259

HISTORY OF ANTHROPOLOGICAL THOUGHT
Alfred L. Kroeber 293

THE INTEGRATION OF ANTHROPOLOGY
Sol Tax 313

TOWARD COMMUNICATION BETWEEN SOCIOLOGY AND ANTHROPOLOGY
John W. Bennett and Kurt H. Wolff 329

Introductory

THERE are many questions of theory and method in anthropology that are of importance no matter which emphasis, historical or processual, is given to a problem. In Part Three, we touch upon only some of those that warrant review.

DOZIER is symbolic of a coming-of-age by anthropology, not only in the United States but elsewhere. Professional training (Ph.D.) and academic employment (Instructor) has been afforded a scholar of Hopi-Tewa ancestry, who now expresses his views on the anthropological concepts of "primitive" and "native." The historical development of the study of nonliterate societies is reviewed, and a brief account included on field techniques and methods, since the approach to field work is to a large extent influenced by the view of nonliterate societies. Then considered is the impact of the study of anthropology on the lay public and on the members of societies which have been the subject of anthropological study. The problem of selecting terminology for purposes of description and classification is both ethical and practical.

MANDELBAUM reports on the notable growth in recent years of studies by anthropologists of peoples of complex civilizations, and of the qualities of that kind of culture termed civilization. Discussion is principally of four main research enterprises: Kroeber's works on a large view of civilization, Benedict's and Mead's studies "at a distance," Warner's American community studies, and Lowie's national culture study of Germany. Brief mention is made of other recent publications on civilizations of Japan, China, India, Egypt, Israel, Europe, and Latin America. The prospects of civilizational studies, based upon a promising beginning, are considered fair and worthy. Sharper positive comparisons and a clarification of the anthropologists' comparative method are called for.

HOWELLS calls attention to the problems of studying the scale of human variation—the differences within likeness among men in their specifically human traits. He foresees increasing convergence of biological and cultural studies—such as students of culture and personality needing to know more about the biological basis of personality, its precise modes and range of variations—with genetics appearing to be a key factor. There are historic similarities between the early approaches of physical anthropologists and ethnologists—the one searching for racial types, the other for cultural types. The study of the type has been supplemented and supplanted by attention to individuals and the idea of variation. One trend is in the study of components of physical variation; the other is in human genetics. Latest developments in blood characteristics emphasize adaptation as a cause of racial differentiation. Though the genetic explanation of variability upsets the idea of group homogeneity and emphasizes human universality, group and individual differences nevertheless are real.

FIRTH considers the theoretical status of the concept of *function* and the recent substantial contributions made through its use. "Functional" concepts have been so absorbed in British thinking as to become commonplace, and surprisingly little attention is paid now by British social anthropologists to methodological consideration of function. This essay discusses the general sense of the term; the recent anthropological history of the concept, beginning with Malinowski and giving emphasis to the contributions of Radcliffe-Brown: and the general sociological contributions. The second half of the paper inquires into the general treatment of functional concepts in recent anthropology, followed by a review of institutional studies that have been formulated with the aid of the concept of function. There seems to be a readiness to utilize the concept, either with or without specific use of the term.

LEWIS, as if in response to Mandelbaum's plea for clarification of the comparative method, holds that there is no distinctive "comparative method" in anthropology. He discusses comparisons rather than the comparative method—the method of a comparison being only one aspect of a comparison. Other aspects are aims or objectives, the content, and the location in space of the entities compared. From the anthropological literature of the last five years, 248 writings are analyzed and classified—28 dealing with theory and method in comparative anthropology, 220 reporting on comparative research. An outline for the classification and analysis of comparative studies is presented (Fig. 1, p. 264). The categories by which the studies are discussed include: global or random comparisons, comparisons between continents or nations, comparisons within one continent, comparisons within a single culture area or region, and comparisons within a single local group or culture.

KROEBER devotes special attention to those aspects of anthropology that have reached a new stage of development. He includes for mention: (1) a rapprochement of biological and cultural study; (2) novel items in linguistic and culture history; (3) general theory and methods; (4) values; and (5) fringe subjects invading anthropology. Attention is called to Huxley's position (as expressed in our Guest Editorial, pp. 3-26) as spear-heading the biologists' recognition of culture. Reciprocating efforts are exemplified by LaBarre's *The Human Animal,* which views culture as something unique developed *in* an animal. The problem of human nature is being reopened; and progress in culture studied for content and development. In linguistics, further use is urged of Swadesh's glottochronological method; and Greenberg's morphology of languages is termed a milestone. In culture history, the work of Redfield on the concept of peasant is reviewed, and the recent volumes by Redfield and by Coon cited as the first indications of challenge to Childe's interpretations of Old World pre-history as history. Slotkin's *Social Anthropology* is interpreted as symptomatic of a trend toward an overtly "social science" orientation for anthropology as contrasted to the older anthropology part natural history, part humanities in character.

TAX inquires into the integration of anthropology as a discipline. The question is not whether sets of data or techniques of different aspects of anthropology are or are not usefully related, but whether anthropology as a historical organic continuum, with a traditional organization related to a broad interest in man, has been and remains generally useful. The pieces of anthropology are now and always have been joined together in a unique and functioning whole. The basis of the integrity of anthropology was established with the first anthropological society, formed in Paris in 1839. The existence of anthropology as a discipline is predicated on the willingness of many varieties of specialists to participate in a system of intercommunication among themselves on problems directed toward the whole study of man.

BENNETT and WOLFF provide some answers to both Kroeber and Tax. They review some aspects of the histories of sociology and anthropology; they point up certain differences between the two fields; they note the emergence of an area of rapprochement in structural-functional research and theory. Bennett concludes with an exploration of the professional relations between sociologists and anthropologists in "joint" departments. The traits common to all of anthropology—perennial curiosity, the sense of the exotic, the universal image of man, and the method of "depictive integration"—can survive regardless of particular concerns or methods. Anthropology's humanistic orientation is the bridge between the "historical" and the "scientific" components of anthropology, and among the social sciences.

The Concepts of "Primitive" and "Native" in Anthropology

EDWARD P. DOZIER

Since 1953, Dr. Dozier has been Instructor in Anthropology at Northwestern University, Evanston, Illinois. Previously, in successive years, he was Social Science Research Council Fellow. John Hay Whitney Research Fellow, Instructor in Anthropology at the University of Oregon, and Wenner-Gren Foundation Post-Doctoral Fellow. He is author of The Hopi-Tewa of Arizona, 1954

INTRODUCTION

THIS paper considers the views of anthropologists toward the societies they have traditionally studied—"primitive" and "native" peoples. These views are considered in terms of the main currents of anthropological theory, because such views and the development of theory bear important relations to one another. A sketch on field methods and techniques has also been included, again because the approach to field work appears largely to be the result of the specific concepts and attitudes that anthropologists have toward nonliterate societies. Finally, the terms "primitive," "native," and the like, are analyzed for their validity as descriptive and taxonomic designations and with reference to their reception by the public-at-large and the peoples so designated.

The problem of terminological designations for nonliterate societies is an especially serious one. The fact that "primitive," "native," and similar terms are often placed within quotation marks indicates the shaky and unsure ground upon which they rest as designations for the societies which anthropologists study. That these terms are not used in a definitive and precise fashion reflects the growing and changing science of anthropology and also a changing world situation. As a science grows and matures it revises and regulates its terminology. More appropriate terms, both in a descriptive and taxonomic sense, replace the older and less appropriate designations. Among anthropologists there is an increasing awareness that these terms are unsatisfactory and inadequate.

Appropriate taxonomic and descriptive designations are more difficult in anthropology than in most other sciences. Students of the physical and biological sciences logically can be concerned only with proper descriptive and classificatory designations, but anthropologists, because they deal with human phenomena, must take into consideration the reception of these terms by the peoples they purport to identify. Anthropologists are thus in the precarious position of having to select terms which are adequate taxonomic and descriptive designations as well as terms which do not evoke a clamor of negative reaction from the public-at-large. This is felt more keenly today because the societies which anthropologists traditionally have studied are themselves in a ferment of change. The impact of industrialized civilization is penetrating into the most marginal and isolated areas of the world. In the process, large numbers of "nonliterates" are becoming literate and participants in "non-primitive" cultures. Anthropologists, therefore, have the task of selecting designations which satisfy the requirements of their science and which do not offend the sensibilities of large numbers of people.

THE ANTHROPOLOGISTS' "LABORATORY"

Anthropology, or more specifically ethnology, has now and in the past depended for much of its basic data on descriptive studies of nonliterate societies. These societies, as generally agreed among anthropologists, have the following characteristics: (1) absence of a written language, (2) a relatively simple technology, (3) social institutions which are cast in a simpler mold, (4) smaller numbers, (5) relative isolation, and (6) societies whose cultures are in general characterized by a slower rate of change. The contrast is made, of course, to social entities with large populations, a written tradition, a complex technology and varied social institutions, and whose cultures are rapidly changing. Benedict's characterization (1934, p. 17) of nonliterate societies and her justification of them as an anthropological "laboratory" is worth quoting here:

> ". . . the most illuminating material for discussion of cultural forms and processes is that of societies historically as little related as possible to our own and to one another. With the vast network of historical contact which has spread the great civilizations over tremendous areas, primitive cultures are now the one source to which we can turn. They are a laboratory in which we may study the diversity of human institutions. With their comparative isolation, many primitive regions have had centuries in which to elaborate the cultural themes they have made their own. They provide ready to our hand the necessary information concerning the possible great variations in human adjustments, and a critical examination of them is essential for an understanding of cultural processes. It is the only laboratory of social forms that we have or shall have. . . ."

As a "laboratory," nonliterate societies provide other advantages as well. The investigator, who is most often an alien, can approach his work with detachment and objectivity—a difficult and often impossible task in the study of his own society and culture. The very complexity of literate societies also prevents comprehensive studies. Rapid communication systems such as telephones, radio, and television have complicated the situation further. The factor of size makes for divergent sub-groups with their own special kinds of values, social goals, and ethics, where the interrelation is so complicated that proper analysis presents in itself a methodological problem of considerable magnitude. In nonliterate societies, on the other hand, the cultures tend to be more homogeneous. There are fewer individuals involved, the patterns in the culture are comparatively regular, so that fewer variables must be dealt with. Moreover, the study of non-European, nonliterate societies helps us to understand the more complex ones. As Linton (1945, p. 12) writes:

> ". . . It is a general rule of science that research should proceed, when possible, from the simple to the complex and the ethnologist has been doing just this in his social and cultural investigations. . . ."

Benedict's statement as to the importance of nonliterate societies as a laboratory, however, is quite inadequate, since they are by no means the only social laboratory we have or shall have. Even when she wrote, those in the fields of personality-and-culture and community studies were exploiting other areas of research. Acculturation and "culture-contact" studies have long concentrated on essentially different kinds of situations, especially where industrialized literate societies have interacted with nonliterate ones. The contemporary tendency of certain anthropologists to drift away from their traditional "laboratory" will be discussed later in more detail; first we review briefly the historical development of the study of nonliterate societies.

HISTORICAL SURVEY

The early pioneers of anthropology, Morgan and Tylor, were among the first to use data from nonliterate societies in a systematic fashion. These writers secured their information about societies different from their own wherever they could get it: from the accounts of travelers and missionaries for the most part. In the vogue of the day, when "unilinear evolutionistic" hypotheses dominated investigation, nonliterate societies were considered "survivals," or degenerated societies. Such societies were most often and most consistently thought to represent "stages" in the cultural growth of mankind that culminated in the so-called "advanced" traditions of Europe. "Psychic unity" also characterized the thinking of the day so that the work of the early anthropologists was done largely in the belief that primitives represented the back-waters in the historical stream. The specific attitudes toward nonliterate societies as held by Morgan and Tylor are germane to report. Morgan writes in his *Ancient Society* (1877, p. 41):

> "The inferiority of savage man in the mental and moral scale, undeveloped, inexperienced, and held down by his low animal appetites and passions, though reluctantly recognized, is, nevertheless, substantially demonstrated by the remains of ancient art in flint, stone and bone implements, by his cave life in certain areas, and by his osteological remains. It is still further illustrated by the present condition of tribes of savages in a low state of development, left in isolated sections of the earth's monuments of the past. . . ."

The attitudes of Tylor toward nonliterate societies are almost identical with those of Morgan. Indeed, in the quotation below (Tylor, 1891, p. 31), something akin to Morgan's three-fold classification of the world's societies into savagery, barbarism, and civilization is evident:

> ". . . We may, I think, apply the often-repeated comparison of savages to children as fairly as to their moral as to their intellectual condition. The better savage social life seems in but unstable equilibrium, liable to be easily upset by a touch of distress, temptation, or violence, and then it becomes the worse savage life, which we know by so many dismal and hideous examples. Altogether, it may be admitted that some rude tribes lead a life to be envied by some barbarous races, and even by the outcasts of higher nations . . . while the general tenour of the evidence goes far to justify the view that on the whole the civilized man is not only wiser and more capable than the savage, but also better and happier, and that the barbarian stands between. . . ."

The well-known fact that Tylor and Morgan examined a wide range of available literature on nonliterate cultures in their day must be re-emphasized, for they were scholars in every sense of the term. This is evident from their writing, rich in documentation. And while both of these men have been accused of being "armchair anthropologists," they had high regard for empirical data and each had had field experience. Tylor had traveled in Mexico, while Morgan is considered the first comprehensive field worker. His studies on the Iroquois of New York must be regarded as setting new standards for the investigation of nonliterate cultures.[1] Morgan also made several brief trips to the western United States at considerable expense and sacrifice to collect data at first hand (White, 1942, pp. 1–26). In addition, Morgan was in correspondence with large numbers of people throughout the world to obtain information about other nonliterate peoples (Lowie, 1937, p. 62).

Tylor, too, valued field work. As Lowie (1937, p. 71) put it:

> "Tylor was not technically a field worker, yet he was the very opposite of an armchair anthropologist. That he saw Mexican natives in his early manhood and later (1884) paid a brief visit to Pueblo villages counts for something, but more important is his unremitting tendency to study culture in the very heart of a metropolis. He receives a Tasmanian skin-scraper and forthwith has it tested by his butcher; he peers into shop windows for a parallel of the Oceanian pump-drill; in Somersetshire he watches a weaver throw her shuttle from hand to hand; and discerning a problem in aboriginal gesture languages, he learns hundreds of signs in the Berlin Deaf and Dumb Institution."

We no longer hold with Tylor's view that human societies can be placed in a series of strata substantially uniform throughout the world. Nor do we go along with Morgan's axiom that all social institutions can be classified into neat stages of savagery, barbarism, and civilization. The writings of Morgan and Tylor are significant, however, in the development and use of an important methodological approach in anthropology—the comparative method which both applied assiduously to their data. In their efforts to fit nonliterate societies into the evolutionary ladder they posited, they carefully combed the literature. They erred by forcing data into categories established on the bases of single criteria (social, political or whatever) or, in other cases, criteria heavily overweighted.

---

[1] Lowie, R. H., 1937, pp. 54–67; White, Leslie, 1951, pp. 11–17.

It is important to keep constantly before us the fact that anthropological studies were in their infancy when Morgan and Tylor wrote. The intellectual climate of their day made imperative the classification of phenomena into uniform, orderly sequences. Most important was the fact that studies of nonliterate societies were lacking for large areas of the world, and those that existed were of questionable validity. In view of these limitations, their impressions of "primitives" and their essentially untenable scientific and speculative assumptions become less grievous.

Morgan and Tylor have exerted considerable influence on several contemporary anthropologists, as is seen in the recent re-examination of their theories and assumptions by such students as White (1949) and Steward (1949). Though proof has not as yet been given, the evolutionary framework, through the use of more refined and controlled methods and in combination with historical and functional points of view, may give us more acceptable results.

After the turn of the century, anti-evolutionistic views emerged in both Europe and America. The most radical of these stressed the uninventiveness of man and tried to explain cultural content as ultimately derived from a single source. This extreme position was maintained by the British anthropologists, Smith (1929) and Perry (1923). These two writers, whose views were never accepted by the majority of anthropologists, attempted to explain the derivation of almost all cultural elements from one source—Egypt. Their postulations were based almost wholly on philosophical and speculative thinking. Their views of nonliterate peoples, therefore, were vague and undefined.

W. H. R. Rivers, the psychologist, whose anthropological interests dominated his later life, eventually affiliated himself with Smith and Perry as an extreme diffusionist (Smith, 1924, p. v–vii). Rivers did ethnographic research of a high caliber. The publications of his investigations among the Todas and to a lesser extent among the Melanesians constitute genuine contributions to descriptive studies of nonliterate societies. Heralding a view later made more explicit by Boas was Rivers' concept (1924, pp. 52–53) of "primitive" thought:

> "There can be no greater hindrance to progress in our attempts to understand the mind of man of lowly culture than the belief so widely held, that his actions are determined by motives having that vague and lawless character ascribed by many to the thought of savage man. There are even those who hold that such peoples as the Papuan and Melanesian have not yet reached the logical stage of thought. I believe there is no single department of social life in which it cannot be shown that this view is false . . . I hope the facts brought forward here are sufficient to show that, in the department of his activity in which he endeavors to cope with disease, savage man is no illogical or prelogical creature, but that his actions are guided by reasoning as definite as that which we can claim for our own medical practices."

More significant for the purposes of this paper are the contributions of the so-called Kulturkreis school of Fritz Graebner, Father Wilhelm Schmidt, and others. These anthropologists consider the peoples of the world as products of several core cultures which spread over the entire world after attaining essential characteristics in the Old World, especially in Asia. As these basic cultures spread, new elements were added and others lost, but in every case enough of the original complex remained so that each could be identified (Schmidt, 1939).

The views of the Kulturkreis school regarding the peoples they study, however, appear to be substantially the same as those of their predecessors and contemporaries, and representative of an older stratum.

Their attitudes thus differ from the present view toward nonliterate peoples held by American anthropologists, which was established by Boas and is discussed in detail below.

It is now important to consider the views of Boas and his students who are responsible for much of the present attitude toward nonliterate peoples and a novel approach to field investigations. The so-called American historical school emphasized the study of nonliterate cultures and rigorous field techniques. Boas insisted that all aspects of these societies be studied, and that cultural groups be described from within, from the viewpoint of the members of the society rather than from that of the ethnographer. He promoted the learning and use of native languages; where this was impossible he suggested recording of native terms, the collection of texts, and the teaching of natives to write their own language so that they themselves could record significant aspects of their culture.

For Boas and many of his students, nonliterate societies provided the only data for anthropological research. So much were such societies considered the legitimate laboratory of the anthropologists that the acculturation and extinction of nonliterate societies as such were viewed with alarm. Thus, for example, Linton (1945, p. 10) remarks:

> ". . . Until very recent times, ethnologists have limited their fact-finding activities to the so-called "primitive" peoples, those living outside the scope of the few rich and complex cultures which we call civilizations. The more isolated such groups and the more widely their cultures differed from our own, the greater has been the interest in them. The old line ethnologist is in the seventh heaven if he can find a group which has never seen a white man before and he views the current opening up of the far corners of the earth with all the alarm of any craftsman whose livelihood is threatened. . . ."

The conception of the nonliterate as mentally inferior and as an individual incapable of surmounting his "lowly level" of culture was specifically challenged by Boas in *The Mind of Primitive Man.* In this collection of essays Boas showed conclusively that the mentality of "primitive" man was not substantially different from that of "civilized" man. Boas demonstrated that the lowly station and inferior position in which a member of a nonliterate society is placed is merely the result of an ethnocentric comparison on the basis of one standard—the yardstick of the anthropologist's own culture. He insisted that investigations be made without such preconceived notions.

In terms of theory, Boas severely criticized the comparative method as it was employed by the classical evolutionists. In a paper condemning the comparative method, Boas (1940, pp. 276–280, 633–634) formulated two imperatives for anthropologists: (1) detailed studies of specific tribes in their cultural and regional context as a means to the reconstruction of the histories of tribal cultures and regions, and (2) the comparison of these tribal histories, with the ultimate objective of formulating general laws of cultural growth.

As is well known, Boas' first imperative was carried out in an admirable fashion by Boas himself and his students. The second task, the application of the comparative method, was largely ignored in the intense preoccupation of describing indigenous societies (Ackerknecht, 1954; Eggan, 1954).

Although the use of the comparative method was minimized by Boas and his students, they produced excellent descriptions of nonliterate societies. That so-called primitive societies were the "laboratory" of the cultural anthropologists was not doubted during this period. Most important in terms of this paper are the attitudes toward nonliterates and the efforts of the investigators to describe cultures in terms of the societies studied. This was true of all aspects of culture—the forms and categories were not to be imposed from without; they were to be "discovered." Bidney (1953, pp. 688–689) ascribes the attitude toward "primitives" and the reluctance to evaluate cultures of Boas and his students as an expression of the liberal and democratic climate of their culture:

> ". . . As liberals and democrats, they merely accentuated tendencies inherent in their culture

> but professed to have derived their "higher tolerance" from a comparative study of primitive cultures. The idea of an "ethics of violence" . . . and of perpetual crises brought about through the conflict of social classes and national interests, which Marx and Sorel taught, did not enter into their peaceful scientific perspective at all. Had they thought in terms of the possible incompatibility and conflict of ideologies and of the doctrine of social revolution rather than of social evolution, they would not have labored under the naive optimism of cultural laissez-faire. It has taken the impact of the second World War to shake this romantic cultural optimism and to awaken anthropologists to the reality of cultural crises and to the need for cultural integration on a world scale."

In criticizing Boas and his students for their reluctance to evaluate cultures, Bidney also appears to reject the anthropological approach to the analysis of nonliterate cultures. This approach in itself does not condone cultural relativism; it advocates, rather, the need for discovering or ascertaining the unique cultural systems of nonliterate societies. It specifically emphasizes that one cultural model cannot be used in the study of another; for the standards and categories vary tremendously among diverse cultural groups. It is true that cultural relativism arose as a byproduct of this approach but it is not inherent in the approach itself.

Whether the scientific attitude of Boas and his students was derived from the study of nonliterate societies or from the values inherent in their own culture is unimportant within the limits and purposes of this paper. The approach of Boas and his students is significant, however, in establishing the fact that cultures of nonliterate societies are adequate and consistent systems. And most important, the approach has destroyed a former view of "primitives" as inferior, child-like beings or men incapable of rising above their assigned cultural level.

The contemporary British social anthropologists tend to regard their discipline as completely concerned with the study of nonliterate societies. This point was made by Evans-Pritchard (1951, pp. 10–11) when he reported: "Social Anthropology . . . can be regarded as a branch of sociological studies, that branch which devotes itself to primitive societies." The views of British anthropologists regarding the methods of studying these societies appear to be similar to those already sketched for contemporary American anthropologists, since they share with Americans an emphasis on field studies and, at least with Boas, the desirability for learning native languages (Firth, 1951, p. 474; Evans-Pritchard, 1951, pp. 76–77).

British social anthropologists differ, however, from their American colleagues in other significant ways. The most important difference, perhaps, is that they restrict themselves to a narrow range of cultural phenomena and, though they no longer reject history, they rarely engage in historical analyses. As Murdock (1951, p. 471) points out, "They are interested primarily in social groups and the structuring of interpersonal relationships rather than in culture, and in synchronic rather than diachronic correlations." Murdock concludes (1951, p. 472) that "British social anthropology [is actually] a specialized school of sociologists." With these statements Firth (1951, p. 477) is in substantial agreement.

Returning again to America, there is today—at least among many anthropologists—a trend away from the study of nonliterate societies to a study of modern communities and communities in transition. This is due, as one group of anthropologists sees it, to the disappearance of nonliterate peoples and therefore to the need to find a new "laboratory." Another group of anthropologists feels that the methods and techniques perfected on nonliterate societies can be applied with effectiveness to other types of communities. The former view is espoused by Kroeber (1953, p. 360) in commenting on community studies:

> ". . . It is plain that the present-day community study of a more or less isolated group within a larger society, and its particularities of culture, is merely a substitute for the old-fashioned holistic tribal study on which ethnography cut its teeth. Primitive persistencies just got to be fewer and fewer and became so remote that where formerly for a few hundred dollars one

> could study a tribe for a summer, now one has to go off for most of a couple of years and it is a matter of thousands of dollars to do field work —and many native cultures are wholly gone, even as memories. So anthropologists faced with a shrinking material . . . have turned to the modern type of community study, which you can sometimes make by paying a dime and taking the subway somewhere downtown. In these community studies one can still use the traditional face-to-face methods, the familiar personal-relation-with-informants methods, which have been distinctive of anthropologists as compared with most sociologists and all economists."

Ralph Linton (1945, p. 10) emphasizes the utility of the traditional techniques and methods of ethnologists on modern communities and he reports:

> ". . . Ethnologists of the younger generation are less worried by the march of events [than old line ethnologists about disappearance of nonliterate societies]. The study of cultures widely different from our own has led to the development of techniques for fact finding and, above all, of attitudes of detachment, which lose none of their value when they are applied to civilized societies and cultures in transition. It is more romantic to study the natives of a South Sea island than a community of Iowa farmers, but the same scientific methods can be used with both and both can yield significant results. As long as human beings continue to live in communities and to develop special ways of life to meet special conditions the ethnologist will not be threatened with technological unemployment. . . ."

Kroeber, in his concluding review of *Anthropology Today* (1953, pp. 366–367), is frankly concerned about the survival of ethnology as a discipline devoted to the study of nonliterate societies: "I am about ready to abandon this baby [ethnology] to the wolves—to a premature fate or to a senescent death as one may see it." He then indicates why he believes ethnology appears to be vanishing: the decrease in primitives, the failure to make classifications and comparisons, and the tendencies to leap directly into large-scale speculations.

In answer to Kroeber's statements, Eggan (1954, p. 756) calls attention to cultures as yet untouched in the interior of New Guinea. He also points to untapped resources of peoples in Africa, India, Southeast Asia, Indonesia, and Melanesia. These last are cultures under change, a challenging "laboratory."

Beals' remarks (1953b, p. 65) in the introduction of a paper describing a community under the impact of industrialized civilization are also pertinent:

> ". . . Statistics are poor or nonexistent for many parts of the world, but by the most conservative estimate more than two-thirds of the world's people live in villages; the figure may well be seventy-five or eighty per cent or more. Moreover, the village is a conveniently small unit for the study of many problems of theoretical importance.
>
> "Numbers and convenience are not the only reasons to study the village. Today the village world is in a ferment of change under the mounting impact of industrial civilization, and gives rise to some of the most critical problems of our times. The varied conditions of change likewise provide as near an approach to laboratory conditions as the student of man is likely to find. Both the needs of science and urgent practical affairs call for study of the village. . . ."

As for Kroeber's second point, the failure to make classifications and comparisons, Eggan points to the need of borrowing the methods and techniques of the British social anthropologists and for following the lead of Murdock as exemplified in his *Social Structure* (1949). Eggan suggests that we return to the basic problems American ethnologists were tackling in the 1920's and 1930's with new methods and points of view and greater range of concepts. He feels that the tendency to leap directly into large-scale speculations is diminishing. Eggan points to such investigations by Kluckhohn, Opler, Hoijer, Goodwin, and others among Southern Athapascan-speaking peoples as fruitful kinds of research. As other examples of effective utilization of the comparative method, he mentions Spoehr's researches in the Southeast and Redfield's studies in Yucatan.

Eggan (1954, p. 759) concludes his answer to Kroeber:

> "I have suggested there may be some virtues in combining the social anthropological concepts of structure and function with the ethnological concepts of process and history. If we can do

> this in a satisfactory manner we can save the 'ethnological baby' from the fate to which Kroeber has consigned it. . . ."

The interest in nonliterate peoples still is very much alive. The cultural anthropologist or ethnologist is vitally concerned with these societies although it may be difficult in some cases to tell the modern versions—the changed and acculturated communities. Yet the "laboratory" is rife with problems of theoretical importance, whether it involves a community in the traditional sense or the modern, changed variety.

FIELD TECHNIQUES AND METHODS

The inclusion of the following brief account on field techniques and methods is deemed appropriate because the approach to field work is to a large extent influenced by the view of nonliterate societies, especially as established by Boas.

The most recent and full accounts are those of Lounsbury on linguistics; Henry and Spiro on psychological techniques; Paul on interview techniques and field relationships; and Lewis on controls and experiments in field work.

What characterizes the work of anthropologists among nonliterate groups from investigations carried out by other disciplines is that of observation and interview. While working in a nonliterate society the anthropologist participates to a greater or lesser extent in the lifeway of the people. Among some groups this is essentially impossible, of course. White, for example, was unable to take part in Keres life, though he visited the various pueblos and observed public ceremonies when circumstances permitted him to do so. This was because of the intense reticence of the Rio Grande Pueblo Indians toward being studied. White (1935, p. 7) reported the peculiarities of field work among these peoples:

> ". . . To the reader unfamiliar with the pueblos of New Mexico it should be said that in most of them it is utterly impossible to do ethnological work in the open. The ideal of going out and "living the life of the people" is utterly impossible among the pueblos along the Rio Grande. On the contrary, these pueblos are very strongly opposed to telling outsiders anything pertaining to their customs and beliefs. Children are taught from infancy to tell outsiders nothing. Strict watch is kept over all that none may betray the pueblo's secrets."

Complete participation of an alien in a society unlike his own where physical characteristics set him apart from others in the community is probably impossible. The nearest approach to complete participation may have been achieved by Florence Kluckhohn. The varied kinds of participation and their advantages are fully discussed by Kluckhohn (1940) in her excellent paper.

"Going native," granting the possibility, has serious difficulties of emotional involvement and identity. Paul indicates that in such cases the investigator often ceases to be an observer and can no longer be counted within the fold of anthropologists. He cites (1953, p. 435) the instance of Frank Cushing at Zuñi who became so emotionally identified with the people that he refused to continue publishing his Zuñi data.

Another desideratum of the field worker among nonliterate societies is learning the language. In the earlier days this was almost a necessity when communities were wholly or largely monolingual. In more recent years the language problem has been circumvented by the use of bilinguals as informants or as interpreters. Kluckhohn (1945, pp. 111–114) indicates that some knowledge of the language is indispensable even if natives are bilingual or interpreters abundant.

The collection of texts in the native idiom was stressed by Boas and was essentially characteristic of his monographs and those written by his students. Texts are always helpful but perhaps more to the linguist and for the specialized interests of the student in culture and personality. Mechanical aids such as wire and tape records may be used in a variety of useful ways and are becoming standard equipment in the field. This statement also applies to photographs, either black and white or color. Motion pictures of various aspects of native life are extremely desirable, but the high cost of film and cameras and the equally important consideration of their possible rejection by the people to be studied, tend to restrict their use.

Rigorous sampling procedures are usually not utilized by anthropologists interested in the general cultural patterns of nonliterate societies. As Mead (1953a, pp. 654–655) points out, sampling in anthropology is of a different kind, viz.: ". . . in which the validity of the sample depends not so much upon the number of cases as upon the proper specification of the informant, so that he or she can be accurately placed, in terms of a very large number of variables—age, sex, order of birth, family background . . . etc." This statement is based on the view of culture as an integrated system (especially relevant in a small, fairly homogenous group), and a few informants, as long as they are full participants in the culture, should be able to give you the general cultural patterns of the society. Essentially this is what Herskovits means when he reports (1954, p. 16) that an informant cannot invent a culture, any more than he can invent a language. However, Mandelbaum (1953, p. 185) has pointed out significantly that, when one is interested in the variations of cultural patterns, more careful sampling methods are essential.

THE NON-PROFESSIONAL PUBLIC AND THE "NATIVE"

But what of the readers of anthropological literature outside of our professional, select circle, for we cannot escape the impact of the study of anthropology on the lay public. Not only do we consider this a valuable and natural course of a science devoted to the understanding of behavior, of man understanding man, but in recent years a number of "popular" books and articles have been aimed directly at the non-professional public. Furthermore, we must realize that this literature reaches not only large numbers of literate peoples of industrialized societies, but also members of societies which have been the subject of anthropological study. Indeed, many of these people are themselves in professional positions, such as teachers, lawyers, medical doctors—even anthropologists. In other words, it is important to recognize the fact that large numbers of "natives" are now full participants in literate, industrialized cultures and contributors to a way of life which has been considered alien to them. They are strongly affected by the work of anthropologists, especially with the literature devoted to them and most particularly with the terminology used.

Any anthropologist who has addressed a large audience composed of persons of mixed backgrounds has realized that he has had to choose his words with extreme care when he talked of his "laboratory." Even the professional anthropologist most inclined to use such terms as "primitive," "backward," "savage," and the like has had to grope for substitute words. The problem of choosing proper and unoffending terminology has become increasingly difficult in professional publications, in the classroom, and in public lectures.

The lay public of non-"native" origin accepts for the most part the negative connotative values of anthropological terminology with respect to nonliterate societies. Since "racial," "mental," and cultural attributes of a people are ordinarily conceived as a *gestalt* by the public-at-large, the anthropologist's terms are accepted as characterizations of nonliterates in all three categories. Thus, when the term "primitive" is used to designate a particular nonliterate society, the popular assumption is that such people are racially, mentally, and culturally retarded. This concept of nonliterates appears crucial in the unfavorable reception often accorded anthropologists in their attempts to study modern communities. The objection to being studied by an anthropologist is apparently because the members of modern communities feel that they are being relegated to the category of "primitives" with all of the unpleasant attributes associated with this term and similar designations. The reaction of Hollywood to Powdermaker's study (1950) is evidence on this point. Hollywood raised a hue and cry about being classed as "savages"—this reaction was expressed profusely and with great emotion in newspaper and magazine articles. Hollywood's response is thus a good index of what the lay public thinks about anthropology and the societies anthropologists study. Those anthropologists interested in modern communities are of course aware of this problem. The anticipated difficulties of entree and rapport have led to the assumption of more familiar and more "respectable" roles, such as those of teacher (Powdermaker, 1939), or "historian" (Paul, 1953, pp. 432–433).

To the public-at-large, it seems, then, anthropologists are those who study backward, crude, uncivilized, or savage people. It also should be emphasized that the terms used by anthropologists are interpreted by the lay public generally to apply to the physical, mental, and cultural characteristics of nonliterates. Anthropologists may present the case of these societies clearly and emphasize the contemporary point of view that there is no evidence to demonstrate the physical and mental inferiority of any people; but so long as they use terminology which has a popular etymology that belies scientific usage, just so long will the non-professional public consider and think of "primitives" and "savages" as such.

It is remarkable how term-conscious social scientists can be when they study literate communities. It is obvious that in the study of modern communities the positive or negative reaction of such communities is anticipated. Observe, for example, the fictitious place-names used in the published reports of: *Middle Town, Yankee City, Plainville, U. S. A.* In the last of these publications the writer even found it expedient to use a pseudonym. Sociologists, because they deal wholly with literate societies, consistently have been aware of terminology and have refrained from using emotionally or negatively charged terms in setting up classificatory or taxonomic systems. Thus dichotomies like "gemeinschaft-gesellschaft" and "urban-rural," do not carry the negative connotations that characterize anthropological designations. This is true of the essentially sociological studies of Redfield in Yucatan. His "tribe," "folk," "urban" designations do not connote negative meanings.

Except for a few notable exceptions, anthropologists have not taken the trouble to hide the identity of the nonliterate societies they have studied.[2] It should be emphasized, however, that many anthropologists have gone to considerable trouble in their published reports to safeguard informants, but for the most part these precautions have not been extended to whole societies. Even more rarely have anthropologists attempted to choose less offensive terms for the characterizations of nonliterates generally. Yet it is encouraging that even this censure must allow for exceptions. A few anthropologists, for example, have circumvented the more derogatory terms or those which have ambiguous designations. Thus, for instance, the recent introductory textbook on anthropology by Beals and Hoijer (1953) avoids the use of the term "primitive," yet lucidly documents achievements and developments in selected societies. Others use the more offensive terms in quotes or preface them with "so-called," indicating dissatisfaction and disapproval of such designations. Herskovits in *Man and His Works* (in which the use of "primitive" was first specifically rejected) makes a strong case (1948, pp. 74–75) for *nonliterate* as the appropriate term:

> ". . . Several terms to replace 'primitive' have been suggested. 'Non-historic' which is one of these, has not found much acceptance. It implies that absence of written history is the equivalent of having no history at all, which, of course, cannot be said of any people who exist in time. 'Preliterate' has found more favor, but the objection to be raised here is that the prefix *pre-* carries a meaning of time that infers prediction. It is, in essence, a carry-over of the 'contemporary ancestor' concept since it implies that peoples without written languages are at a stage antecedent to the one in which, presumably, they will devise, or at least acquire, writing. The third form, nonliterate, simply describes the fact that these people do not have written languages. It is sometimes confused with 'illiterate,' but the use of this latter word should be guarded against, since it carries a distinct

---

[2] For exceptions see Kluckhohn, Clyde, 1951; Mead, Margaret, 1932.

> connotation of inferiority in ability or opportunity, or both. Nonliterate, because it is colorless, conveys its meaning unambiguously and is readily applicable to the data it seeks to delimit, is thus to be preferred to all the other terms we have considered. . . . It is to be recognized that commonly certain other characteristics go with an absence of writing. Nonliterate peoples are found on observation to be relatively more isolated, to have smaller numbers, and to be less addicted to rapid change in their sanctioned modes of behavior than those that have writing. In recent generations, moreover, Euro-American culture has had to be set off not only from nonliterate cultures, but from the literate cultures outside of Europe and America as well, because of the presence in European and American culture of a technology based on power machinery and the scientific tradition. But it must be recognized that none of these differences, except perhaps this last, is as clearly manifest as is the presence or absence of writing."

Agreement on an adequate term or terms, appropriate both as a classificatory designation and one free of unpleasant connotations is admittedly difficult. Although the term "nonliterate" has been used in this paper it is not a completely satisfactory term. Its possible confusion with "illiterate" makes it an unfortunate term to use. Moreover it is no better than the more negatively charged terms as a classificatory designation. Anthropologists however can seek better terms and in the meantime guard against using the more offensive terms like "primitive," "savage," and other similar designations. Terms like "tribe" or "tribal," "simple" or "simpler," "complex" or "less complex," and others carry less derogatory connotations. Such terms could be used interchangeably. It is true, of course, that any one of these terms under local or special cases might carry or acquire negative meanings; in such instances other more neutral terms should be substituted. In specific cases the term "folk" might be used although this has been given specialized meaning in the writings of Redfield and others[3] and may not be appropriate under all circumstances.

The reasons for selecting terms which do not offend and degrade nonliterates are essentially ethical, but in view of the world situation, can be practical as well. It is appropriate to quote again from Herskovits, who is keenly aware of the problem. In the preface of his revised edition of *The Economic Life of Primitive Peoples,* recently reissued under the title of *Economic Anthropology,* Herskovits (1952, pp. v–vi) remarks:

> ". . . The change in title represents a reorientation in point of view that goes far beyond the question of mere terminology. Ten years ago, the word 'primitive' came easily to lips. It is only with the rapid development of communications of the past decade, and the growing integration of peoples of the most diverse cultures into the world scene, that the essentially pejorative and tendentious character of this designation, like others such as 'savage,' 'backward,' or 'early' when applied to any functioning way of life, became apparent. This is not the place to analyze the cultural or psychological problems of the emergent nationalisms found in expanding and newly literate communities of Africa and Asia and of other non-machine societies. Yet when their story is told, the role played by reaction of their leaders against designations of this order will be found to be a major factor in the latent or explicit hostilities of which these movements are in many cases the expression. . . ."

A similar objection was voiced by Mead (1953b, p. 351) in the discussion of the papers in *Anthropology Today:*

> ". . . [we must avoid value-laden terms] like 'native,' 'vernacular,' and 'primitive,' [which antagonize non-Europeans]. We have to watch at every turn that we do not compromise our capacity to work in the international scene in which each people makes a contribution to the science of anthropology, and recognize that only after each major culture area of the world has made its contribution can we have man commenting on man in terms of man's whole history of thought."

Professor Lips in *The Savage Hits Back* presents a well-documented account of the rise of nonliterate peoples throughout the world and paints a frightening picture of the awakening of millions of "primitives" to white exploitation and injustices. A brief quotation (1937, pp. 25–26) from his book is important:

---

[3] Redfield, Robert, 1947. For criticism of the "folk" concept see Foster, George M., 1953, pp. 159–173; Steward, Julian H., 1950, p. 113.

> "The predominance of the white race is still an existing fact, but it has long since been undermined. It consists chiefly in the strength of the British Empire and the solidarity of Europe. We cannot in the future reckon with absolute certainty upon either of these factors. It is impossible to foretell here what the consequences of a new European war [World War II] would be. But one fact is certain: after such a war the white race will have lost the upper hand. Coloured nations will be employed in far greater measure than in the last world war to combat white enemies, and their racial feeling is being cultivated to a pitch whence it is turning against their own white masters. The white man has long ago ceased to be a God, especially since war strips the last shreds of mystery from the technical secret of his superiority. And Gods without secrets, especially Gods whose internal dissension supports them on feet of clay, are rapidly dethroned."

Much of Professor Lips' prophecy has been borne out. There is certainly greater race tension in the world at present than before the war. Asia and Africa are rife with "native" problems and white supremacy specifically is being challenged.

It is clear that the anthropologist no longer can hold out in his academic shell and be immune to the reactions of large numbers of nonliterates who deeply resent negatively charged terminology by which they often are characterized. Especially is this significant when the terms as used by the anthropologist often have no relevance to the connotative value given them by popular usage. Moreover the negative terms used for nonliterate societies do not have a precise descriptive or classificatory value. When the term "primitive" may apply equally to the native of Tierra del Fuego and the Inca of the Andean highlands; to the Bushman of South Africa and to the Yoruba of West Africa, what scientific justification is there for using it?

Anthropologists are aware of the inadequate descriptive and taxonomic designations used in their discipline. Steward, among others, discusses these problems significantly and extensively in his monograph on Area Research (1950, pp. 106–114). The remarks of White (1949, p. 21) are also germane; in arguing for more precise scientific terminology, he reports:

> ". . . The maturity of science in any field can be rather accurately gauged by its vocabulary: as 'a science' matures it develops its own terminology. This has taken place extensively in the physical and the biological sciences. And such words as *instinct, intelligence, race, society,* are now being found so difficult to use that it is likely they will give way soon to a more effective terminology."

To the list White might have added "primitive," "backward," and the like. We need a more appropriate taxonomic terminology, it is clear; but we must be careful to select terms which do not insult the status and sensibilities of the large numbers of people they purport to identify.

This plea for a more appropriate classificatory and a less derogatory-tainted terminology is not intended to suggest that anthropologists should not seek order, development, and even former conditions of society among nonliterate societies. There is no reason why we cannot have an adequate developmental classificatory scheme and still avoid terms which assign large numbers of the world's population into inferior, degraded statuses.[4]

---

[4] Grateful acknowledgment is made to the Graduate School, Northwestern University, for the aid provided in the preparation of this article. The author also wishes to express his thanks for helpful comments and suggestions by Dr. Fred Eggan, University of Chicago; Dr. William Bascom, Mr. Warren d'Azevedo, and Dr. M. J. Herskovits, Northwestern University. None of them, however, is to be considered as having endorsed or agreed, necessarily, with the organization, contents, or views expressed in the paper; for the latter, the author alone is responsible.

REFERENCES

ACKERKNECHT, ERWIN H.
1954 "On the Comparative Method in Anthropology," pp. 117–125 in Spencer, R. F. (ed.), *Method and Perspective in Anthropology.* Minneapolis: The University of Minnesota Press. 323 pp.

Beals, Ralph L.

1953a "Acculturation," pp. 621–641 in Kroeber, A. L. (ed.), *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

1953b "The Village in an Industrial World," *The Scientific Monthly*, Vol. LXXVII, No. 2, pp. 65–75.

Beals, Ralph L. and Hoijer, Harry, with the collaboration of Roediger, Virginia More

1953 *An Introduction to Anthropology*. New York: The Macmillan Co. 658 pp.

Benedict, Ruth

1934 *Patterns of Culture*. Boston: Houghton Mifflin Co. 290 pp.

Bidney, David

1953 "The Concept of Value in Modern Anthropology," pp. 682–699 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

Boas, Franz

1938 *The Mind of Primitive Man*. New York: The Macmillan Co. 285 pp.

1940 *Race, Language and Culture*. New York: The Macmillan Co. 647 pp.

Cooper, John M.

1917 *Analytical and Critical Bibliography of the Tribes of Tierra del Fuego and Adjacent Territory* (Bureau of American Ethnology, Bulletin 227). Washington: U. S. Government Printing Office. 233 pp.

Eggan, Fred

1954 "Social Anthropology and the Method of Controlled Comparison" (Presidential paper, 1953, American Anthropological Association), *American Anthropologist*, Vol. 56, No. 5, pp. 743–763.

Evans-Pritchard, E. E.

1951 *Social Anthropology*. London: Cohen and West, Ltd. 134 pp.

Firth, Raymond

1951 "Contemporary British Social Anthropology," *American Anthropologist*, Vol. 53, No. 4, pp. 474–489.

Foster, George M.

1953 "What is Folk Culture?," *American Anthropologist*, Vol. 55, No. 2, pp. 159–173.

Goodwin, Grenville

1942 *The Social Organization of the Western Apache*. Chicago: University of Chicago Press. 701 pp.

Graebner, Fritz

1909 "Die Melanesche Bogenkultur und ihre Vervandten," *Anthropos*, Vol. 4, pp. 726–780, 998–1032.

1911 *Methode der Ethnologie*. Heidelberg: C. Winter. 192 pp.

Henry, Jules and Spiro, Melford E.

1953 "Psychological Techniques: Projective Tests in Field Work," pp. 417–429 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

Herskovits, Melville J.

1948 *Man and His Works*. New York: Alfred A. Knopf. 678 pp.

1952 *Economic Anthropology*. New York: Alfred A. Knopf. 547 pp.

1953 *Franz Boas*. New York: Charles Scribner's Sons. 131 pp.

1954 "Some Problems of Method in Ethnography," pp. 3–24 in Spencer, R. F. (ed.), *Method and Perspective in Anthropology*. Minneapolis: The University of Minnesota Press. 323 pp.

Hoijer, Harry

1938 *Chiricahua and Mescalero Apache Texts*. With ethnological notes by Opler, Morris Edward (University of Chicago Publications in Anthropology—Linguistic Series). Chicago: The University of Chicago Press. 219 pp.

Kluckhohn, Clyde

1936 "Some Reflections on the Method and Theory of the Kulturkreislehre," *American Anthropologist*, Vol. 38, No. 2, pp. 157–196.

1945 "The Personal Document in Anthropological Science," pp. 79–173 in Gottschalk, L.; Kluckhohn, C.; and Angell, R., *The Use of Personal Documents in History, Anthropology, and Sociology* (Social Science Research Council Bulletin 53). New York. 243 pp.

KLUCKHOHN, CLYDE—Cont'd

1949 "The Ramah Project," pp. v–vi in Leighton, Alexander H. and Leighton, Dorothea C. with assistance of Catherine Opler, *Gregorio, the Hand-Trembler* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XL, No. 1). Cambridge. 177 pp.

1951 "A Comparative Study of Values in Five Cultures," pp. vii–ix in Vogt, Evon Z., *Navaho Veterans* (Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. XLI, No. 1). Cambridge. 223 pp.

KLUCKHOHN, F. R.

1940 "The Participant Observer Technique in Small Communities," *American Journal of Sociology*, Vol. XLVI, No. 3, pp. 331–343.

KROEBER, A. L.

1953 "Concluding Review," pp. 357–379 in Tax, Sol *et al.* (eds.), *An Appraisal of Anthropology Today*. Chicago: The University of Chicago Press. 395 pp.

KROEBER, A. L. and others

1953 *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

LEWIS, OSCAR

1953 "Controls and Experiments in Field Work," pp. 452–475 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

LINTON, RALPH (ed.)

1945 *The Science of Man in the World Crisis*. New York: Columbia University Press. 532 pp.

LIPS, JULIUS E.

1937 *The Savage Hits Back*. New Haven: Yale University Press. 254 pp.

LOUNSBURY, FLOYD G.

1953 "Field Methods and Techniques in Linguistics," pp. 401–416 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

LOWIE, R. H.

1937 *History of Ethnological Theory*. New York: Rinehart and Co., Inc. 296 pp.

LYND, R. S. and LYND, H. M.

1929 *Middletown*. New York: Harcourt, Brace and Co. 550 pp.

MANDELBAUM, DAVID G.

1953 "On The Study of National Character," *American Anthropologist*, Vol. 55, No. 2, pp. 174–187.

MEAD, MARGARET

1932 *The Changing Culture of an Indian Tribe* (Columbia University Contributions to Anthropology, Vol. XV) New York: Columbia University Press. 313 pp.

1953a "National Character," pp. 642–667 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

MEAD, MARGARET *et al.*

1953b "Discussion of Anthropology as a Field of Study," pp. 342–356 in Tax, Sol *et al.* (eds.), *An Appraisal of Anthropology Today*. Chicago: The University of Chicago Press. 395 pp.

MERTON, ROBERT K.

1949 *Social Theory and Social Structure*. Glencoe, Ill.: Free Press. 423 pp.

MORGAN, H. L.

1877 *Ancient Society*. Chicago: Charles H. Kerr and Co. 570 pp.

MURDOCK, GEORGE PETER

1949 *Social Structure*. New York: The Macmillan Co 387 pp.

1951 "British Social Anthropology," *American Anthropologist*, Vol. 53, No. 4, pp. 465–473.

OPLER, MORRIS EDWARD

1941 *An Apache Life-way*. Chicago: The University of Chicago Press. 500 pp.

PAUL, BENJAMIN D.

1953 "Interview Techniques and Field Relationships," pp. 430–451 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: The University of Chicago Press. 966 pp.

PERRY, W. J.

1923 *The Children of the Sun*. New York: E. P. Dutton and Co. 551 pp.

Powdermaker, Hortense

1939 *After Freedom: A Cultural Study in the Deep South.* New York: Viking Press. 408 pp.

1950 *Hollywood, The Dream Factory.* Boston: Little, Brown and Co. 342 pp.

Radcliffe-Brown, A. R.

1931 *The Social Organization of Australian Tribes* (The Oceania Monographs, No. 1). Melbourne: Macmillan and Co. 124 pp.

1952 *Structure and Function in Primitive Society; Essays and Addresses.* Glencoe, Illinois: Free Press. 219 pp.

Redfield, Robert

1941 *The Folk Culture of Yucatan.* Chicago: The University of Chicago Press. 416 pp.

1947 "The Folk Society," *American Journal of Sociology,* Vol. LII, No. 4, pp. 293–308.

Rivers, W. H. R.

1906 *The Todas.* New York: Macmillan and Co., Ltd. 755 pp.

1914 *The History of Melanesian Society.* Cambridge: University Press. 2 vols.

1924 *Medicine, Magic, and Religion* (The FitzPatrick Lectures delivered before The Royal College of Physicians of London in 1915 and 1916). New York: Harcourt Brace and Co., Inc. 147 pp.

Schapera, I.

1953 "Some Comments on Comparative Method in Social Anthropology," *American Anthropologist,* Vol. 55, No. 3, pp. 353–362.

Schebesta, Paul

1933 *Among Congo Pigmies* (trans. by Gerald Griffin). London: Hutchinson and Co., Ltd. 287 pp.

Schmidt, Wilhelm

1939 *The Culture Historical Method of Anthropology* (trans. by S. A. Sieber). New York: Fortuny's. 383 pp.

Smith, Sir Grafton Elliot

1924 "Preface," pp. v–viii in Rivers, W. H. R., *Medicine, Magic, and Religion* (The FitzPatrick Lectures delivered before The Royal College of Physicians of London in 1915 and 1916). New York: Harcourt Brace and Co., Inc. 147 pp.

1929 *Human History.* New York: W. W. Norton and Co., Inc. 472 pp.

Spencer, R. F. (ed.)

1954 *Method and Perspective in Anthropology.* Minneapolis: The University of Minnesota Press. 323 pp.

Spoehr, Alexander

1947 *Changing Kinship Systems* (Anthropological Series, Chicago Natural History Museum, Vol. 33, No. 4). Chicago. 153–235 pp.

Steward, Julian H.

1936 "The Economic and Social Basis of Primitive Bands," pp. 331–350 in *Essays in Anthropology presented to A. L. Kroeber.* Berkeley: University of California Press. 600 pp.

1949 "Cultural Causality and Law: A Trial Formulation of the Development of Early Civilizations," *American Anthropologist,* Vol. 51, No. 1, pp. 1–27.

1950 *Area Research, Theory and Practice* (Social Science Research Council Bulletin 63). New York. 164 pp.

Steward, Julian H. (ed.)

1946–1950 *Handbook of South American Indians.* (Bureau of American Ethnology, Bulletin 143) Washington, D. C.: U. S. Government Printing Office. 6 vols.

Tax, Sol *et al.* (eds.)

1953 *An Appraisal of Anthropology Today.* Chicago: The University of Chicago Press. 395 pp.

Tylor, Edward B.

1891 *Primitive Culture.* London: J. Murray. 2 vols.

Warner, W. L. *et al.*

1941–47 *Yankee City Series.* New Haven: Yale University Press. Vols. I–IV.

West, James (pseud.)

1945 *Plainville, U. S. A.* New York: Columbia University Press. 238 pp.

WHITE, LESLIE A.

1935 *The Pueblo of Santo Domingo* (Memoirs of American Anthropological Association, No. 43). Menasha, Wisconsin: American Anthropological Association. 210 pp.

1942 "Lewis H. Morgan's Journal of a Trip to Southwestern Colorado and New Mexico, June 21 to August 7, 1878." *American Antiquity*, Vol. 8, No. 1, pp. 1-26.

1949 *The Science of Culture*. New York: Farrar, Straus and Co. 444 pp.

1951 "Lewis H. Morgan's Western Field Trips." *American Anthropologist*, Vol. 53, No. 1, pp. 11-17.

The Study of Complex Civilizations

DAVID G. MANDELBAUM

Dr. Mandelbaum is Professor of Anthropology at the University of California, Berkeley, California. He is author of The Plains Cree, 1940; Soldier Groups and Negro Soldiers, 1952.

THE term "civilization" generally means a culture which includes the use of writing, the presence of cities, and the development of occupational specialization. Such cultures are usually more complex, have more discernible parts, than are cultures without these criteria, but the term is a relative one. Some non-literate societies have maintained cultures undoubtedly complex, with cities and occupational specialization as well as many another special adaptation. And some societies in which literacy was present still have had little in the way of towns or occupational refinements.

Hence the term "complex civilization" carries the connotation of those cultures which have bulked large in time and space, and which have had many interlocking parts. The civilizations of China, of Japan, of India, of the Arab world, of Western Europe, come to mind as examples of such complex civilizations; each of them has a number of variant forms according to country or region or period.

In recent years there has been a notable growth in the study by anthropologists of peoples within the orbit of one or another of these civilizations. There has also been increased interest in the qualities of that kind of culture which is called civilization. Civilized peoples and cultures have never been excluded by anthropologists from their scholarly scope, but the main field efforts and the preponderance of analytical studies dealt with simpler societies and cultures.

A variety of reasons has impelled anthropologists to turn increasingly to the study of civilizations. One reason, perhaps not a major one, is the fact that there are fewer simple, autonomous societies than there were even a few decades ago. Another reason is that some anthropologists, having developed certain concepts and methods with data from primitives, have sought another set of cultures on which their concepts could be tested and in which there was more elbow room in documented history than was available for the unlettered cultures.

Not the least of these reasons lies in the general temper of the times in Western civilization, particularly in the more westerly parts thereof. Two world wars have left, among other things, a widespread concern for a better understanding of human behavior and some sentiment that the anthropologist's approach may be helpful. The experience of a good many anthropologists during World War II in dealing with practicalities in various civilizations may well have hastened the trend toward observing cultural forces among the numerically predominant and historically documented peoples. Thus, in the preface to his book *Amazon Town* (1953, pp. vii-viii), Charles Wagley tells how his first field work in Brazil was in 1939 among an isolated Indian tribe which still followed the aboriginal way of life. Two years later he returned to study a less isolated tribe, one that was being drawn into the national culture. Then during the war years, "I learned about Brazil both as an anthropologist and as a practical administrator. My anthropological perspective was of tremendous help in the work of administration and planning, and in return my growing familiarity with practical problems helped to sharpen the focus of my scientific interest in Brazil. . . . I became aware of rural problems as viewed both by the people themselves and by the planners and executives from the city."

The present writer had similar experience in India in 1937. In preparing himself for field work in India, Mandelbaum studied Sanskrit, read Indian history, acquainted himself with the classic literature. But such was the anthropological climate then that he chose as subjects for field study certain isolated tribesmen in the Travancore High Range, peoples more remote culturally from the main tradition of Indic civilization than are most on the sub-continent. After a brief period among them, he moved on to work with a group closer to the main civilization. The inclination to study villagers and to examine the main tradition was apparent before the war, but it was encouraged, in India also, by the experience of anthropologists in their wartime duties. Now only a minority of anthropologists arriving from abroad to do ethnological field work in India choose to work among tribesmen.

The following review of the anthropological literature dealing with complex civilizations, published during 1952–1954, selects for discussion four main research enterprises. Two of them, Kroeber's and Warner's, were begun considerably before World War II. The third, which was initiated by Ruth Benedict and later led by Margaret Mead, developed out of wartime assignments. A wartime teaching task gave rise to the fourth piece of research, by Lowie, which is considered in some detail. Only brief mention can be made of other relevant writings, some of them of major caliber.

Because many a writer in the social sciences and humanities deals with complex civilizations, an arbitrary limitation of the scope of this survey had to be made. It is confined to writings by anthropologists and reviews of their writings, with only a very few exceptions. Many a meritorious work by sociologists, historians, philosophers, and others could not be included. The bibliography, which was completed with the help of Pertti Pelto and Kathryn Huggins (to whom our thanks are due), does not claim to be complete, since anthropologists habitually publish in such a wide variety of expected and unexpected sources that any attempt at exhaustive coverage was not feasible. Studies dealing with only a narrow segment of culture, or with a particular set of social relations, or with a single institution—albeit within a civilization—generally have not been included in the bibliography. The titles listed are of papers which devote some consideration to a complex range of patterns within or among complex civilizations.

A LARGE VIEW OF CIVILIZATION

A. L. Kroeber's interest in the study of civilizations is of long standing and has yielded some of the most significant writings in the field. In an article of 1953, "The Delineation of Civilizations," Kroeber discusses certain fundamental problems which are entailed in the comparative study of complex, literate, and historically documented cultures. Foremost among these problems is that of defining the entity which is to be described and compared.

This paper was addressed to historians and it makes special note of those few among historians, such as Danilevsky, Spengler, and Toynbee, who have tried to make systematic comparisons between whole civilizations. Among them, Toynbee especially has recognized the importance of formulating criteria by which a culture-whole can be defined.

Kroeber notes that anthropologists have long been accustomed to describing whole cultures, but mainly tribal cultures. They have been reluctant to deal comparatively with civilizations, partly because of inexperience with the documentary record, partly because of the size of the subject. Studies of communities within one of the great civilizations have been concerned with a cell or an organ rather than with an autonomous whole, this article notes, and anthropological works of larger scope—as of national character and ethos—are not likely to face the problem of what delimits a major civilization.

Six criteria are proposed by which such delimitation can be made; discontinuity in space or time, language, religion, political and military development, economy and technology, style. "To the student of culture, civilizations are segregated or delimited from one another by no single criterion: partly by geography, partly by period, partly by speech, religion, government, less by technology; most of all, probably, by those activities of civilization that are especially concerned with values and the manifest qualities of style." (Kroeber, 1953, p. 275).

With his usual perspicacity, Kroeber has directed us to a fundamental problem which, when satisfactorily resolved, can open the way to further analyses of civilizational wholes. He has given us a grip on the problem, a hold which is fairly secure until we meet the crucial concepts of value and style. Here our grasp of the matter becomes less sure and we may turn to some of Kroeber's other papers for additional discussion of the study of civilizations.

These papers appear in the final section of "The Nature of Culture" (1952), a volume of selected papers; this part is subtitled "History and Process in Civilization." In the introduction to the section, the author gives an overview, as of 1952, of the studies there reproduced. The earliest of them, "Order in Changes of Fashion," was published in 1919, an outgrowth of an interest that was even then of twenty years' standing. This analysis was continued in the 1940 monograph *Three Centuries of Women's Dress Fashion: A Quantitative Analysis.*[1]

"The purpose of both studies," Kroeber writes (p. 329) in his introduction of 1952, "is to find pattern in so fluidly capricious a thing as dress fashion, and to express quantitatively and objectively something of the qualitative behavior of change in pattern. In 1919 . . . demonstration of the mere fact of pattern in culture seemed a triumph. However, it is plain that even then I was not seeking to establish recurrent uniformities between different cultures. The regularities announced exist within one small domain of a single civilization: they are a piece of a history." Yet we may note that while the dress fashions studied are all within European-American civilization, the study did entail regularities among the wealthier classes of several different national cultures—mainly British, French, Austrian, and American. The basic pattern of evening dress was the same in these cultures, and there were similar variation rates in the several cultures within the limits of the basic pattern.

A bold fresh view of civilization—in the singular—is presented in another paper of the section, "The Ancient Oikumenê as a Historic Culture Aggregate." The focus of this view, in the words (p. 331) of the 1952 introduction, is ". . . the history of all civilization seen as an intricately interconnected single whole, gradually coming to cover the main land mass of our planet. How far, in short, can the history of higher civilization be seen as a unitary process, as a single, large-scale, long-term *event?*"

The opening passages of this paper set the scene for the analytic exposition. A culture or a part thereof, Kroeber writes, must be studied in relation to the totality of known culture. By placing a particular complex against the grid of the known range of variation, its individuality or its genericness may be understood. The ultimate natural unit of study for ethnologists is the whole grid, all of culture. And we build up our knowledge of the parameters of culture by systematic comparisons, one particular culture with another, until we understand something of the nature and range of all of culture.

---

[1] All the papers in the section, except for the one of 1919, appeared originally between 1939 and 1951, ". . . the period in which I was either working on *Configurations of Culture Growth* or trying to follow farther the problems raised therein." (p. 329).

These comparisons involve, the paper continues, three aspects of cultural phenomena, (1) content, (2) form or style, and (3) the values of the content and of the style. Content remains much the same wherever it is carried: form and values vary from culture to culture and from period to period. The main conclusions of the paper concern the first of the three aspects, culture content. Style and value, the aspects in which each great civilization displays its individual qualities, are more briefly explored.

The Oikumenê is a vast nexus of cultural content which has developed among peoples on the Eurasiatic land mass and, more recently, has been extended to the Americas. The term means "the inhabited," which is what the Greeks called their known habitable world: Kroeber (p. 379) shifts its ancient meaning from "range of mankind" to "range of man's most developed cultures." It is shown to be a great web of culture growth, reaching from Japan and China to Britain and the Americas. Within it, Kroeber writes, new cultural materials such as sculpture, domesticated plants and animals, divine kingship, have tended to be transmitted from end to end. New idea complexes and their related practices similarly tend to spread through a long stretch of the area. The generative center for many new culture elements has been in the region of Egypt-Mesopotamia and, as the element was taken up successively by outlying groups, each group developed the element to a new intensity. "The simile inevitably rises to mind of a spark somehow falling on a textile, slowly smoldering, and finally beginning to eat its enlarging way through the fabric, the greater intensity of combustion being always where the flame has reached only lately, until the spatial frame of the cultural web is reached with, so to speak, the oceans." (*Ibid.*, p. 380.)

Not all inhabited areas have been part of the web. The author notes that Australia and native America, for example, have not. But primitive peoples within the Oecumenical land mass, or adjoining it, have derived their cultures through reductive selection from the civilization characteristic of the Oikumenê as a whole.

The geographic and social limits of the Oikumenê are thus sketched, and further study of this world stage may proceed. We may want to ask why certain cultural materials have been taken over in every part of the stage and others have not, why transmission has been more rapid for some elements and slower for others, why some peripheral peoples have quickly come to adopt the materials of civilization while others have persistently held off.

In the paper "The Novel in Asia and Europe," Kroeber does offer some suggestions on one such question. He finds that the novel, in its main varieties, has appeared only within the past millenium and has flourished only in the far eastern and far western edges of Eurasia. The two novel writing traditions apparently evolved quite independently of each other. "This coincidence," the paper concludes (p. 416), "most likely roots in the fact that during the late period it was only on these two peripheries that there existed forms of civilization that were at once mature and yet still vigorously productive in creativity."

Of the other papers in the section, we here can mention only the one entitled "Is Western Civilization Disintegrating or Reconstituting?" in which certain trends of civilizational development are postulated. The kind of development traced does not clearly prevail in technological activities, the "reality ingredients," which are more unendingly accumulative than are the value activities. But in a fine art, a philosophy, or a science, Kroeber notes (p. 402) a usual rise and fall. A value or a style "tends to develop and progress, even though it later degenerates and dies. An art or a philosophy moves on; it cannot continue to spin on a pivot." Each civilization is essentially characterized by its own particular styles and values, and these are always in a state of developmental flow. This development is not reversible, although a culture may be rearranged at some juncture of history and be started off in a new direction.

The question posed in the title of the paper is answered by comparing the present stage of Western civilization with that of its earlier periods. The author concludes that it appears somewhat likely, or at any rate possible, that our civilization is in a second stage of reconstitution, rather than in one of dissolution.

The final paragraph (p. 408) of this paper tells us that the analysis is an endeavor in applied anthropology, of a long-range variety. It leans heavily on history, "with emphasis, for the time being, not in the mere events of history, which are as unending as the waves of the sea, but on the qualities of its secular trends; and that these trends be construed, so far as possible, in terms of the style-like patterns which so largely characterize civilizations, and in terms of the developmental flow, interactions, and integration of these patterns."

If, after reading these papers, we seek sharper criteria for distinguishing these "style-like patterns," or further leads toward formulating the characteristic values of a civilization, it is because we have been made aware of that bright and promising terrain for anthropological study to which Kroeber has pioneered. His concepts, however they later may be amended or reconsidered, have the virtue of being organic to specific observations, and are not as external to the data and entangling as are, say, those of Toynbee. Indeed, Kroeber's comment (p. 378) on Toynbee's scheme applies also to his own, better based approach, ". . . this scheme has served him [Toynbee] well as a scaffold from which to rear a most stimulating structure of fertile comparative interpretations of a large part of human history."

Perhaps the fundamental problem which Kroeber poses for himself in these studies is the broad exploratory search for regularities in the development of civilizations and of civilization. The sweep of the search is vast—within a civilization, among civilizations, in the whole of civilization—a search to be undertaken only by a venturesome mind of large courage and compass. The method is to choose a likely subject, such as dress fashions, sculpture, the novel, or an intriguing idea, as the developmental flow of civilizations, and to compare the various occurrences in space and time and context. The comparisons require concepts, such as those for the delimitation of a civilization, or for the distinguishing of content and value. The concepts are built up as the exploration is carried on, and as further investigation appears to require the development of new concepts or the refurbishing of old.

The results of these studies have been to bring significant regularities to light: those documented in the "small domain" of evening-dress fashions draw attention to the stability of pattern limits (of the basic dress pattern, in this case) within which the apparently aimless fluctuations follow a long-term swing. During the last three centuries, the secular swing has been affected, though not disrupted, by the general state of the whole culture and society.

Another set of regularities postulated by these studies has to do with the developmental tendencies of whole civilizations: that, for example, the values which characterize them do not remain constant but are impelled to develop, that the development is irreversible but reconstitutable. The contemporary implications of reconstitution or disintegration are equalled by the current applicability of the concept of the Oikumenê: If an interwoven cultural network has existed over the main habitat of humanity since times primeval, how much more total is its scope, more intense its effects, and how much more rapid is transmission within the modern Oikumenê, in this the twentieth century? The importance of this fact for a knowledge of man and society has not escaped anthropologists and they have been turning in increasing proportion and with mounting interest to studies of peoples within this new total culture sphere.

STUDIES "AT A DISTANCE"

A series of studies, reflecting such growing interest, was initiated with Ruth Benedict's *The Chrysanthemum and the Sword* (1946). This holistic depiction of Japan has drawn wide comment, and in 1953 there appeared a most interesting summary of the professional articles and scholarly symposia devoted to the book which have come from Japanese scholars (Bennett and Nagai, 1953). Most interesting, because it reviews the appraisals by sophisticated and learned members of a society of an anthropologist's analysis of their civilization.

Benedict's work does not try to compare various civilizations, as does Kroeber's, nor is it concerned with the nature of civilization in general. It mainly sketches the principal motifs in the single civilizational whole of Japan. An assessment of these motifs and the method of deriving them is not within our present scope, but the Japanese reactions to the book, as brought together in 1953, deserve comment.

The methodological criticisms which the Japanese scholars make are not essentially different from those made by American and European reviewers. Bennett and Nagai classify them under six headings. (1) *The meaning of "Japanese."* Benedict is said to be unduly vague about which Japanese are meant; differences of class, region, and period tend to be glossed over. Moreover, the patterns of behavior are ideal-typical patterns, which reflect what many Japanese like to aspire to or want to believe of themselves, rather than their actual, real behavior. (2) *The meaning of "culture."* The concept is endowed, say some of these critics, with deterministic qualities; hence, that which the study seeks to prove is also assumed. (3) *Use of empirical data.* Most of the critics note that interpretation of the data tends to be over-generalized. Statistical variations are not taken into account; the differences between what people say and what they do is not distinguished; hypotheses about the effects of child-rearing practices are not convincingly linked to the evidence. One critic, with training in philosophy, remarks that these over-simplifications come from Benedict's working model of a simple, primitive society; hence she sees Japanese society as though it were uncivilized and undifferentiated. This comment is particularly significant since, as we shall see later, it is repeated in relation to other works using Benedict's approach. (4) *Need for an "institutional" approach.* This whole-culture approach seems too static to several of the critics, too severely integrated, and too heedless of conflicts and differences. It should be replaced or supplemented, they say, by studies of varying institutional contexts which would bring out conflicts and differences. (5) *The problem of historical change.* Benedict is said to overemphasize the continuities in the culture and underplay the vast changes which have come about. (6) *Need for an interdisciplinary approach.* The task of analyzing a modern, complex society is simply too much for any scholar, working alone, to attempt. A team of cooperating specialists is needed for the endeavor.

Yet for all these pungent critiques, warm appreciation of the book was expressed by the critics. Some of those who objected to Benedict's interpretation of the information she obtained from respondents, applauded the fact that she collected this information at first hand from living respondents. The empirical procedure seemed to them a long step in advance of the more purely speculative trend which had prevailed among Japanese social scientists. While a number deprecated the adequacy of Benedict's lone resources in sizing up a whole civilization—and one which she had never seen functioning in its homeland—they still were favorably impressed by her use of diverse sources and specialists and by her deft organization of those data which she could muster.

Similarly, although these Japanese commentators were strongly critical of some of the concepts presented, they were especially attracted to her general approach, ". . . the battery of imaginative insights and concepts with which she interpreted her data. Particularly important here was her attempt to portray the *whole* of Japanese culture—a goal which has been common enough in certain branches of Japanese humanistic studies for many years." (Bennett and Nagai, 1953, p. 406). Characteristic of these comments is one which was pointed out and translated by Mr. Takao Sofue. It was written by Kawashima (1949, p. 263), a scholar widely respected in Japan and Professor of Sociology of Law at Tokyo University: "It is wonderful that the author, who had never been in Japan, could delineate so vividly the various hidden aspects of Japanese mental life and culture . . ."

Thus, despite the grave faults they find in it, the book has impressed a number of these Japanese writers as a stimulating and seminal work, one whose scientific leads should be followed. Part of the acclaim may be due to the fact that the first Japanese edition appeared in 1948 when there was great interest among educated Japanese both in reexamining the nation's career and in knowing the views of Americans about it. The Japanese publisher's blurb did not hurt sales, however much it may have violated the facts. Mr. Sofue relates that it read, "It is this book that decided the final occupation policy of MacArthur."

But there seems to be more to their good estimate than merely the special interests of the early post-war years. The books does seem to tell something about their civilization which they had not known before, or had only partly known and had not seen formulated, as Benedict attempts to do, for the whole culture. It may be that an oversimplified model for investigation, which blithely, perhaps deliberately, glosses over statistical variations, may have some uses toward the understanding and the further study of a civilization.

Yet another effect of this book must be noted. Whatever its stimulus value may be for scholars, it had a relatively wide audience in Japan and among many Americans who have lived in Japan. Readers of both kinds usually found much that was interesting, pertinent, and enlightening (if irritating) in the book. To a good many of them, anthropology came to mean a study that was concerned with problems of living people here and now, as well as with the long ago and far away. The public image of a discipline does not necessarily determine its course, but it is also not irrelevant to the direction which that course may take.

The direction of study set in Benedict's book on Japan has been followed by more recent works, most of them the results of the Columbia University Research in Contemporary Cultures. This project was inaugurated by Ruth Benedict under a grant from the Office of Naval Research. After her death, the project was led by Margaret Mead. One of the first book-length studies to emerge from that project is Mark Zborowski and Elizabeth Herzog's *Life Is With People* (1952).

It is a depiction of the *shtetl*, the Jewish small-town community of Eastern Europe, mainly as it existed in the years before World War I. Shtetl culture was a distinctive civilizational sphere, even though it existed in a vast series of cultural islands scattered within various national cultures. While it was not clearly set off from the environing civilization by spatial or political criteria, it was clearly distinguished from them in many ways. The book is mainly concerned with depicting the central and distinctive attributes of shtetl life.

In the sense that it deals with the major themes which wove through the whole fabric of that life, and is a generalized "composite portrait" which does not aim to portray any one community or attempt to give a corpus of ethnographic detail, this work is an example of what has come to be called the patternist or configurational approach. The authors give their theoretical outline in an appendix (pp. 431–432) and in it one can see readily how they have shaped the study to bring out the main emphases of shtetl life. The subject of the first of the five parts of the book is "Sabbath as a culture theme." Then follow such discussions as that on the role and symbolism of the sacred Law, on "good deeds" and the institutions of the community, on the life cycle and the calendric cycle. The final section is entitled "As the Shtetl Sees the World."

Hence this work, like Benedict's on Japan, presents a generalized inside view of a civilization, sketching the highlights of experience and the broad linkages of people and ideas within the orbit of that civilization. Like Benedict's book also, it had to be done "at a distance." Not, in this case, because of a wartime necessity, but because of the physical extinction of that way of life. The shtetl study, too, draws on a wide range of resources—literature, law, folklore, as well as living respondents. And the fact that the respondents had been long removed from shtetl society may have made for a greater nostalgic recall of harmony and rewards than of misery and conflict. In one major respect the shtetl study was done differently: it was based on the work of a team of cooperating specialists. The two authors thus had the advantage of utilizing the preliminary studies and the advice of their co-workers when they came to write the book.

It is remarkably well written. Cahnman, a sociologist who was not uncritical of the theoretical foundations of the study, nevertheless began his review (1952, p. 655) with the sentence, "This book makes beautiful reading." Anthropologists are coming to be more cognizant of the humanistic component of the discipline: this is a fine humanistic contribution to anthropological literature, perhaps even to literature in the wider sense as well.

Reviewers were not loath to point out sundry short-comings of the book, but the various critics agreed that it gives a vivid sense of the main concerns and meanings which underlay shtetl life, concerns and meanings which were constant through all the complexities of this special sub-type of European civilization. Thus the Sabbath observance is lucidly drawn and its unifying, vivifying effects clearly shown. On another plane, we note the dominant concern for maintaining the social web of the community and for ensuring that no member is demeaned. Hence the great indecency of inflicting shame on another, the multiple associations for helping others, the high desirability of being a donor rather than a recipient, and the great personal pleasure derived from participating in a proper societal enterprise.

Those reviewers who had some knowledge of the shtetl uniformly commented on the authors' skilful and convincing presentation of such themes as these. But they also added strong comment on the deficiencies they saw in the work. Their criticisms are much like those made by the Japanese critics of Ruth Benedict's whole-culture study. They too object that the shtetl portrayal is over-generalized, that it is too static, that it slights change and conflict. Thus Raphael Patai observes (1952, pp. 543–545) that the "historical understructure" is ignored, that the relation between the shtetl and the environing peoples is largely neglected, that the respondents formed a biased sample. Ben-Ezra notes (1953, pp. 183–185) that some of the characteristics postulated for all of East European shtetl culture were really valid mainly for Poland, others were only typical of urban communities, still others of particular classes. Cahnman similarly comments (1952, p. 656) that the book tells us much about the beauty of holiness and about marital devotion but little about economic conflict and grinding poverty; that, after being confronted with the ideal type of family life, one might like to learn something of the modifications and the deviations. We are offered, he writes, "a romantic idyll."

In like manner, Moshe Decter's extensive review gives thoughtful praise to the book as "an informative and well-rounded study, the best of its kind in English." But one of Decter's concluding passages (1952, p. 604) remarks, "The paradox was that the shtetl, more miserable than this book shows it, also was part of a chain more magnificent than it imagines. The anthropologist's single snapshot, slightly retouched and beautified, prevents us from grasping the second reality as well as the first."

Anthropologists may want to ask whether this critique by a non-anthropologist is a useful one for our purposes. After all, how much can be included within the cover of one book? Can an anthropological work be expected to convey both the misery and the magnificence of a long historical career? Moreover, a snapshot—even a slightly beautified and simplified one, provided it clarifies a strategic vista—can be a most useful contribution.

It is true that processes of change are not much considered in the book. Thus we are told (Zborowski and Herzog, 1952, p. 112) that the holy scripture, the Torah, was viewed as a code that was absolutely binding and yet at the same time subject to interpretation and adjustment. But we are not shown how the adjustments were made and what regular patterns prevailed in the changing interpretations. It is also true that the environing milieu of non-Jewish society is frequently alluded to, but its effects are not really incorporated into the analysis.

However, it is at least arguable that before processes of change can be formulated, some basis of comparison must be established so that it is known from what, or to what, change has taken place. And the book gives such a basis as of the decades just before World War I. The effects of the extra-shtetl society are certainly significant, but before the impact of any exterior force on a social entity can be gauged, it is well to know something of the nature of the entity. Again, the book provides some of the requisite understanding of that nature.

As for the slighting of regional, class, or sectarian differences, there is something to be said for presenting the generalized version (built up indeed by the selection of regularities among different special phrasings) so that the likeness of the whole may be comprehended first. Then the regional or class variations better may be seen as differences within a given range of custom and of theme. Similarly, it may not be all bad to start with a sympathetic portrayal of how the people like to see themselves. Ideal patterns do have a governing effect on real behavior, even though that effect may not be what the people say or think it is.

The critiques of Zborowski and Herzog's study are useful insofar as they point to next steps in research, steps made feasible and possible, even obvious, by these first attempts with a new and promising approach. Such critiques tend to be only captious if they imply that this effort, and others like it, are the last word on the subject or the fruit of a long-matured research development.

Perhaps the research step next indicated by this and similar works is one which the reviewers have not really examined. It is implied in Zborowski and Herzog's statement (p. 20) of their purpose in the shtetl study. "It is an attempt to show the special ways in which these people have met the problems common to all mankind." But the common problems of mankind are implied rather than systematically stated. We get a lively impression that the shtetl solutions are special ones, but little specific notion of the degree and manner of their specialness. The authors scarcely can be brought to task for this, since the necessary theoretical concepts have not yet been well developed and their establishment will demand a broad research enterprise.

Let us give one example of the materials with which such an enterprise may deal. Shtetl people shared the common concern of all peoples in maintaining the net of interpersonal relations. As we have noted, there seemed to be an especially deep concern with that maintenance in the shtetl, so that—to use Sapir's phrase—the court of last appeal even in matters religious was in the social act rather than in the private emotional experience. Yet there are other peoples who also seem especially sensitive about societal relations—Japanese for instance, or Brahmins. As yet we have no clear-cut criteria by which to assess the varying degrees and types of concern with this common problem. It would seem that Japanese are most concerned with the proper interlocking of the component parts of society; Brahmins seem engrossed in the preservation of one's status in the social hierarchy; shtetl Jews seem to have been absorbed with keeping the society going as a constituency of independent and fundamentally equal persons. In another context, Mandelbaum (1955) has hazarded that the Japanese kind of emphasis seems to have been best suited for the accomplishment of specific tasks, the Hindu to cultural and societal stability, the Jewish to adaptability and social continuity. Such speculative comparisons must remain only speculative in default of a firmer theoretical basis concerning the common human problems and the range of variation in meeting them.

Yet another major theoretical question was raised by several reviewers of *Life Is With People.* The question was particularly brought to their notice by Margaret Mead's methodological comments in her introduction to the book. Thus Mead wrote that anthropology has been the study of people outside the main currents of history, and from this experience came the special approach used in anthropological studies. Cahnman's review (1952), though brief, fastens on the flaws he finds in that approach. Of Mead's mention of the researchers' happy discovery that there was such a thing as shtetl culture, he is scornful, noting it as the outcome of the "hallmark of this kind of research, namely, the disregard of historical documents." Even a research partner like Zborowski who knows better, Cahnman presumes (p. 656) is pressured into the naïve approach. "The result of these pressures is that you have to revert to the bush, even if you live in the shadow of the New York Public Library. And you must believe that life is what people tell you. Once more, what may have been a necessity in studying preliterate tribes is made a virtue in the face of a highly documented phenomenon of history."

Mead has vigorously countered strictures of this kind. In defending the methodology of the national culture studies done by her co-workers and herself, she writes (1954, p. 397), "It does not, as has frequently been claimed, 'ignore history.' It merely, for purposes of a particular inquiry about a designated group of living individuals, holds history constant." Mead presumably does not mean that history, which is change, is treated as though it were non-change, but rather that she focuses first on the characteristics of a people and their culture at a particular time in their history.

Nevertheless, a good many writers, especially in other social sciences, have come to share the impression that anthropologists deal with complex civilizations as though they were static entities, isolated from outside influence, autonomous in function. They may perhaps find support for this view less in Mead's actual analyses of complex cultures than in her statements about the method of her analysis.

An extensive discussion of that methodology is given in the manual, *The Study of Culture at a Distance* (Mead and Métraux, 1953). In it Mead (p. 10) stresses the significance of anthropological experience with primitive peoples. "This method is called anthropological because it has been developed from methods used by anthropologists in primitive societies and is rooted in certain methodological assumptions that are basic to anthropological work." The most suitable milieu for anthropological theorizing is said (p. 3) to be primitive society: "Anthropologists who wish the best research conditions for their theoretical problems must continue to go to living primitive societies; historians who wish to work on problems of method and theory will correspondingly choose the best-documented periods." The key concept of modern cultural anthropology is said (p. 22) to have come out of the study of comparatively changeless cultures: "This concept of culture, once developed on relatively static primitive societies, has proved useful, when suitably modified, to the study of groups that do not have all the characteristics of the primitive societies in which the concept was developed."

Statements like this last one evoke unnecessary ambiguity. The concept of culture, as indeed it is well formulated by Mead in a paragraph preceding this statement, has to do with the life of man in society, in *all* society whether more complex or less complex. Hence the characteristics of primitive societies—whatever they may be—do not have any specially paramount place in the concept. Moreover, the assumption that primitive societies are in general "relatively static" is probably a bit of a fiction, a useful fiction perhaps, but one more fostered by the observer's ignorance of what the history has been than by any systematic comparison of different rates of change. Nor is it undebatable that a primitive society is, like agar for bacilli, the best culture medium for the growth of anthropological theory. It depends on what kind of theory is sought. If it is theory about relatively isolated small communities, with little specialization, simple technology, and no literacy, then the primitive is the place. But surely few anthropologists, Mead perhaps least of all, would want to confine anthropological theory within such narrow scope. Certainly anthropological theory should encompass varying conditions of culture, both in primitive life and in complex civilizations.

It well may be that there has been special advantage in the fact that anthropology and many contemporary anthropologists began with the study of primitive peoples. From such beginnings has come the inclination to listen to what people say as well as to peruse what has been said about them, to watch what they do, as well as to learn what they think they do or what they want to do. The anthropologist who has been a lone observer studying an unknown tribe has thereby usually accrued confidence in tackling large new problems and in commanding a wide range of data. Mead even draws (p. 92) a further implication, "This habit of control of all the material—exaggerated to an extreme in the case of the anthropologist who has worked alone in an unknown culture—is undoubtedly related to the special kind of certainty that anthropologists often display."

Those beginnings directed the observer's attention to the broad invariant patterns of behavior, the socially agreed prescriptions for action within which there is variation, choice, decision. The ethnographer in an exotic culture could not help noting these basic ways, partly because he could not assume that he already knew them, partly because he was a stranger in that society, and the respondents answered his questions as to a stranger, by generalizing about what "we do" rather than by particularizing about what this one did yesterday or what that person does occasionally.

This experience has enabled some anthropologists to look at a complex civilization with fresh eyes, undistraught by old and possibly misleading assumptions. It has led them to find, with the enthusiasm of discovery, the basic lifeways of that civilization, ways which may be obvious to specialist scholars but also are usually so much taken for granted that they are rarely formulated by them for critical examination and systematic use.

This is all to the good. But it seems unnecessary to confuse that good effect by reference to certain supposed characteristics of primitives. It is true that more than a few able anthropologists have studied primitive societies *as if* their cultures were static and their ways free of variation. And there is a stage of social research where it is useful to study any society, primitive or not, in that way. It seems bootless however to assign attributes to primitive societies which have mainly been the consequences of the ways in which anthropologists have studied primitives. It is a disservice to the many valuable methodological contributions made by Mead and her co-workers to have their pertinence for an understanding of complex societies beclouded by such references to primitives. These references have been taken amiss by more than a few social scientists as imputing static and unvarying qualities to complex cultures as well.

The methodological leads discussed in *The Study of Culture at a Distance* are many, diverse, and stimulating. While the book is based on the studies done under the Columbia University Research in Contemporary Cultures, which could not carry on field work in the places studied and so had to be done "at a distance," it contains much that is useful for any study of a complex culture. The organization of team research is discussed, and the uses of such sources as free interviews, films, and novels are demonstrated. Many of the papers included in the volume were written by various hands as working papers in the course of the project's development. Mead was responsible for the total design of the book, Métraux selected material suitable for inclusion and wrote a number of the papers. Mead's discussion of interview technique is particularly good, as is Gorer's statement on national character. There are sections on group research, work with informants, written and oral literature, film analysis, projective tests, imagery, end linkage, and on applications of the studies. It is such a rich outpouring of ideas and data that one wishes for a Maxwell Perkins to temper the strain of Thomas Wolfe in the writings of Margaret Mead and Rhoda Métraux.

AMERICAN COMMUNITY STUDIES

In W. Lloyd Warner's *American Life: Dream and Reality* (1953), we have a concise summary of the studies done by the author and his associates over some twenty years. These are studies of American communities in various regions of the country and were done (p. viii) "with the techniques he [the author] had previously used in the investigation of Australian tribes and which other anthropologists have used in Africa, Polynesia, and New Guinea." The book is based on the many scholarly monographs and articles which have come out of these studies, but it is written clearly and simply "for all readers."

Its chapters discuss the main topics which have been considered in detail in earlier publications of this major research enterprise. First comes an account of "an American sacred ceremony," Memorial Day; this sets the style of the functional and structural analyses which follow. There are essays on social class and color caste, the family in a class system, individual opportunity and social mobility, the factory in the community, ethnic and sectarian groups, personality development, associations, and mass media.

Since the publication in 1941 of the first volume, by Warner and Lunt, of the "Yankee City Series," there has been written an ample exegetical and critical literature of commentary on Warner's concepts and methods. We need not amplify that commentary here. It seems that few professional students of American society do not take exception to some of Warner's insights, techniques, and conclusions; and few (if any) have remained uninfluenced by his writings.

Of particular interest for our present purpose is the second chapter of the book which deals with ways of studying contemporary society. The author (p. 27) proceeds "to tell what a social anthropologist must do when he studies his own society." The fundamental approach, he writes, is not different from that used in the study of primitive groups; basically the theory and method are the same. Warner stresses that this can be so because contemporary American society does not differ in kind but only in degree from other societies. However, we are told (p. 29) that despite the basic similarity certain adjustments in method are necessary. "Although, in the study of modern society, the anthropologist does not have to change his approach to the body of theory, he does have to change almost everything connected with method and technique." For one thing, the whole society cannot be brought under direct examination, as is true in less populous societies. Hence a community, a territorially defined social entity, is used as a laboratory and as a "representative microcosm."

The study of a modern community, Warner points out, entails certain problems of method which are not as significant in the study of tribesmen. First, the use of writing and of other mass media of symbolic communication introduces complex effects on social life which are not easy to trace. Then culture change often comes from within whereas the more usual anthropological interest has been in changes impinging from outside a society. The author draws attention to the importance of understanding social persistence as well as social change. Another problem in studying a modern community lies in the people's use of number concepts. The people govern their action, especially on the governmental and economic plane, by notions of percentage and of variability, notions which the author says are not held by Australian aborigines. Finally Warner mentions the difficulty which arises because the anthropologist is himself a creature and a carrier of the culture he is studying, a factor which could easily dull an observer's acuity. This is overcome by the anthropologist's training in identifying social similarities and differences across various cultures. And

Warner lists some of the methodological advantages which accrue in the study of contemporary American society—the availability of documentary evidence, of statistical evidence, the insights which come from a participant's inner knowledge, the resources available from other specialist social scientists.

The high degree of specialization in contemporary American life is noted; flowing from this fact are two related and in some ways contradictory tendencies. Very small groups proliferate, each having special interests and recondite symbols, as among litterateurs or among scientists. Yet these small clusters must be tied into the general symbol system and social order; they are not equipped to carry on any autonomous existence. So as society grows more complex there is increasing standardization of public symbols which are understood by all levels of society and by every kind of person. The vehicles of the standardization are the mass media—newspapers, magazines, motion pictures, radio, television. The chapter on method concludes with a discussion of the concepts of status and role, concepts which Warner notes as being fundamental to the study of all society, contemporary American society not the less.

The book is an able popular presentation which stimulates further questions. Thus the concept of status is undoubtedly a fundamental one, although it is not much used in the book. It would be enlightening to know more about the various statuses occupied by particular individuals and how communities or classes differ in the number and kind of status positions which a person may hold. This indeed is one of the strategic variables as between less complex and more complex societies. In an American Indian tribe like the Plains Cree, there were a limited and well known number of status positions for a man. Many a tribesman fulfilled a large share of all available statuses. One man could be, and not infrequently was, hunter, warrior, kinsman, shaman, singer, craftsman. In Yankee City there are many more status positions and one man can scarcely know about them all, much less fulfill the social requirements of each. What societal and personal consequences flow from the increased number of status positions in contemporary communities, as contrasted with the same communities at an earlier period and with communities in other civilizations?

The community which is studied, the author notes (pp. 32–34), should be a representative microcosm which exemplifies central tendencies of American society. But since a goal of the research is to identify such central characteristics, how can they also be used as criteria for the selection of the communities to be studied? The answer seems to be that the criteria used in the first instance to select "Jonesville" as a typical community were such manifest qualities as size, ethnic and racial composition, marketing facilities. The less obvious characteristics of "Jonesville" as later determined by the study may then be used for comparisons and more knowledgeable sampling.

Other questions are suggested by the author's comments on similarities and differences in methods of study as between simple and complex societies. They are similar in that the anthropologist continues to gather his information at first hand, listening, watching, participating in the community's life. Similar also in that the scope of the study is not restricted to any single institution or activity. Nor is it tightly confined by a rigid framework of special theory or procedure. It is different in that the social whole cannot be observed by the anthropologist or even by a large team of analysts. The whole must be sampled (true, incidentally, in so-called simpler societies also), and the sampling can be done by using such special devices of modern complex culture as tests, questionnaires, surveys.

So much Warner does tell us about the study of a contemporary community. But we would like to know more about the system of procedure, how much is necessary in the way of preliminary hypotheses, at what stage of the study is the questionnaire to be used, when are the macrocosmic factors—as of financial credit policies—brought into the account? And we want to know more about how Yankee City compares with

Jonesville in some of Warner's salient considerations, as those of family, class, religion, and personality development. Further, these descriptions and analyses of American communities arouse our interest in comparing them with communities in other national cultures or civilizations.

A NATIONAL CULTURE STUDY

A background for at least one such comparison is richly given in Robert H. Lowie's *Toward Understanding Germany* (1954). Lowie's opening sentence tells us that the book deals with the social psychology of the "Germans" during the last two centuries. The rest of the first chapter defines those included under "German" as anyone who uses standard German as a primary medium of communication in so far as he does not employ his local Germanic dialect.

Then follows a chapter on method of investigation in which the author states, as have other anthropologists here discussed, that the ethnologist's procedures of "observing all he can and pumping suitable informants," which are suitable for the study of small primitive tribes, are alone not enough for the study of a complex civilization. The anthropologist must adapt to this other medium on which he works and adopt other techniques, mainly in the use of documentary evidence. Newspapers, letters, fiction, drama, social surveys are utilized as evidence for understanding Germans. The accounts by German visitors to other countries and by non-German spectators of the German scene are particularly revealing and are tellingly used. The book is particularly notable for the skill with which the author weaves the literary sources into the fabric of his exposition.

But others besides anthropologists have written analytical pieces about Germany, have used similar literary sources, have observed and listened. What special contributions, then, does an anthropologist have to offer? In his chapter on method, Lowie indicates two such contributions. One is the comparative point of view. An example is cited of a work by a political scientist in which the 1871 extension of suffrage in Germany is discussed, with an implication that since women could not vote, this measure was not a liberal one. Lowie points out that a comparison with other governments of the same period shows only the State of Wyoming having universal suffrage. The same political scientist is cited as positing an authoritarian character for German society, giving as one evidence the paucity of nonconformist sects. Lowie compares Germany in this respect with Scandinavian countries and finds that these presumably non-authoritarian peoples also do not have many sectarian growths. Over and again in the chapters of the book, Lowie demolishes such easy generalizations and over-facile implications.

The second contribution which the anthropologist is particularly well prepared to make, Lowie continues (pp. 29–30), is to keep an even keel in the matter of moral judgments. "It is not so easy to abstain from playing the moralist when considering contemporary civilizations; wholly to do so may indeed be impossible, but the degree to which the ideal of detachment is approached will be the measure of scientific worth. A judge may not rid himself of all his personal likes and dislikes, but their free indulgence disqualifies him from the bench."

Lowie succeeds in maintaining an impartial and discriminating view of German life, detached but not aloof. The whole of that life is not surveyed; certain aspects are selected because they are "both significant and accessible to observation." They are particularism (local loyalties and regional differences), the class structure, the family, the Jews of Germany, the political relations to Naziism and to democracy. These topics, the author says, are not entirely discrete; there are reciprocal relations and influences among them. And the chapter on methods ends (p. 30) with this transition to the discussion of the selected topics. "In any case, what unifies the treatment is the ethnological approach—the attempt to separate what is distinctively German. It is my conviction that much of what is popularly conceived as German is in reality either generically human or occidental or Continental European."

The reader readily comes to share the author's conviction and this conviction raises the hope for future works in which more positive conclusions may be reached as to what it is that is distinctively German. Thus the chapters on particularism offer a rich diversity of evidence, but the main conclusion (p. 67) is that despite much localism "German attitudes toward particularism and nationalism are not unique." This conclusion needs stating, but it still does not tell us whether the German manifestations of this widespread phenomena are generically human, or Occidental, or Continental European—or whether indeed they are none of these or whether the question is irrelevant.

The chapters on social classes do stress that Germans are distinctively different from most other Europeans in the matter of social stratification. They have not only maintained rigid class distinctions but have insisted on minute gradings within a class. Moreover, the upper classes do not have the "gentleman's code" and so are more apt to display brashiness, immodesty, and arrogance than are gentlemen of England or Spain. These well may be distinctive characteristics, but in what degree? This question, arising out of Lowie's bountiful array of evidence, calls for more detailed comparisons of Germans with other Europeans and for comparison with, say, Texas oil executives or Rajput nobility. It calls also for some translation of the concept of a "gentleman's code" to some general terminology of social relations. Then the German deficiency in this type of social ideal may be placed on a scale of similar cross-cultural behavior. In that way the degree of German distinctiveness may be more accurately comprehended and the implications of this distinctiveness for the whole culture may be assessed.

The author is by no means oblivious to this desideratum. At the end of his chapters on the family, he says of the German family structure, ". . . it is at present impossible to place it definitively among equivalent systems the world over until we have very much more accurate information than we as yet possess about the family life of other nations." With this statement there can be no disagreement. But we would wish for a different emphasis in the chapters than that which is reflected in the sentence (p. 266), immediately following the above quotation. "What we can state with great positiveness even today is that the average German father and husband was not the incarnation of fiendish brutality that Dr. Abrahamsen has delineated." The most positive conclusion about the family is a negative one. And the strongest shafts of argument are aimed at the work of a psychiatrist, an amateur at societal analysis, whose efforts may not deserve so much critical attention. Perhaps the author's keen perceptions might better have been turned to formulating hypotheses about the German family in comparison with other families of civilized societies.

However we may differ in the matter of such tactical emphasis, we can only applaud Lowie's insistence that all the evidence used be rigorously specified. Generalizations about Germans, the author repeats, must take into account variations of class and region and period. In this he is as critical of works by some non-anthropological social scientists as some of them have been critical of Benedict on this same score. We may concur in Lowie's demolition of erroneous stereotypes and at the same time encourage the formulation of hypotheses which come out of valid evidence and which are to be tested against further evidence.

Lowie's methodological rigor stipulates that no trait is to be called distinctively German unless it is pan-German, pan-diachronically so and shared only by Germans. Following this stipulation in the concluding pages, he notes (p. 354), "The concept of a German culture sphere with which we have been tentatively operating thus turns out to be an ill-defined, if not indefinable, entity." It is not, he continues (pp. 355–356), ". . . that Germans are exactly like other peoples, but rather that western Europe as a whole presents a continuum—one culture and with admittedly innumerable local variations." We may infer that the author would not object to delineating a unit for study—whether a civilization as Kroeber does, or a national culture as Benedict and Mead have done, or a community within a national civilization as Warner advocates—provided that the purposes of, and the criteria for, the delineation are set forth clearly.

The reviews of the book, both in scholarly and in general publications, generally pay tribute to the usefulness of the work in aiding toward an understanding of Germany. One historian, S. K. Padover, notes (1954, p. 40) that the ethnological approach may be well for primitives but is less fruitful in complex industralized cultures. He objects that the picture given of Germany is a static one, that it neglects political analysis, and harbors the delusion that it is possible to study mankind without moral judgments. The first comment we have encountered and have countered before. The ethnologist's usual method of study is not necessarily unsuited to the study of a complex culture nor does it displace the necessary contributions of political scientists and other social scientists. Further, it is well to have a base line—a static picture if it must so be called—from which to appraise change. Static is hardly the term for Lowie's portrayal, drawing as it does on two centuries of German history with frequent comment on change. The note that moral judgment is inevitable may, in the last analysis, possibly be true. But not in the first analysis. Surely Lowie is right in claiming that the evidence must first be collected and ordered according to canons of scientific procedure, i.e., pan-cultural procedure.

A political scientist, H. J. Morgenthau, remarks (1954, p. 2) in a review of the book that "What is lacking to a rather surprising degree is a theoretical framework which would give meaning to a mass of material which is largely left to tell its own story." It cannot be gainsaid that the theoretical notions in the book are not as highly developed as the presentation of the data. But this is in no small degree because anthropological theory is still in a fairly rudimentary state or, rather, such elemental concepts as that of diffusion have yet to be developed in detail. Lowie eschews certain wrong generalizations but he is not in the least opposed to theoretical generalizations. And while he rejects premature moral judgments, he is not without a moral position, as may be discerned in various passages of the work.

As for the impact of the book outside the scholarly sphere, we may refer to a review (Lindemann, 1954, p. 3) in a Stuttgart newspaper. It was captioned *Im Fremden Spiegel*, and it commended the book to German, readers as a true mirror, reflecting accurately the whole lineament of the nation. We may add that for American readers, as for German, it is a most useful work. And it is all the more useful because it is done in a manner which—to use for once some value-laden terms in this survey—is urbane and civilized.

SOME RECENT PUBLICATIONS

Only brief mention can be made here of some of the other pertinent anthropological studies which have been published in the period under review. The civilized societies of East Asia have been relatively well represented among these writings. A survey of work focused on community studies has appeared in *The Far Eastern Quarterly* under the title "Community Studies in Japan and China: A Symposium" (1954). Robert Redfield contributed an introduction to the symposium, Morton H. Fried wrote on China, and Richard K. Beardsley on Japan.

For Japan we have Edward Norbeck's *Takashima: A Japanese Fishing Community* (1954), a fine depiction of a rural community. Its concluding chapter is on the impact of Westernization; in it the influences of the West on Japanese civilization are shown as they affect the life of these fisherfolk. William Caudill's monograph, *Japanese-American Personality and Acculturation* (1952), does not relate directly to the study of civilization but does contain a number of useful insights for an understanding of the two civilizations involved.

A series of reports on Japanese social relations have been issued, in mimeographed form, by the Ohio State University Research Foundation, and are the work of John W. Bennett, Herbert Passin, and their associates (1952–1953).

On China there are two significant recent works by Francis L. K. Hsu. One is *Religion, Science, and Human Crises* (1952), which is subtitled "A Study of China in Transition and Its Implications for the West." The second is *Americans and Chinese: Two Ways of Life* (1953) in which the comparison of these two civilizations is made over a broader front than in the first volume. Morton H. Fried's *Fabric of Chinese Society* (1953) tells of the social life in a Chinese county seat. A study of a class, amplified by some cogent life-histories, is given in *China's Gentry: Essays on Rural-Urban Relations*, by Hsiao-tung Fei (1953). A set of pertinent essays on Chinese civilization, not written by anthropologists, but issued as a memoir of the American Anthropological Association is *Studies in Chinese Thought*, edited by Arthur F. Wright (1953). It is the first of a series called "Comparative Studies of Cultures and Civilizations" which is under the general editorship of Robert Redfield and Milton Singer.

Overseas Chinese are discussed in *The Chinese of Sarawak: A Study of Social Structure* (1953), by Ju-k'ang T'ien, who traces some of the changes in Chinese culture among these transplanted Chinese.

In the past decade there has been a significant forward surge in anthropological studies of cultures on the Indian sub-continent. The results of these studies are beginning to appear in print. Notable among them is M. N. Srinivas' *Religion and Society among the Coorgs of South India* (1952). Srinivas complements his description of Coorg life with an analysis of the influence on them of the complex of Brahmanical civilization, a process he labels "Sanskritization." S. C. Dube's *Indian Village* (1955), entails some discussion of the larger civilization. Irawati Karve's *Kinship Organisation in India* (1953) discusses some features of Indic civilization; on a different plane Adrian Mayer's *Land and Society in Malabar* (1952) does also. In press at the present writing are two important volumes of village studies by anthropologists, both containing illuminating comments on Indic culture. One is edited by M. N. Srinivas and published by the Government of West Bengal, the other is edited by McKim Marriott and will be issued as one of the series under the general editorship of Redfield and Singer.

A book which deals with the effect of different civilizational backgrounds on a newly established state is Raphael Patai's *Israel between East and West: A Study in Human Relations* (1953). Patai writes of the difference in world view among Israelis from the Arab and North African countries and those from Europe and North America. Hamed Ammar's *Growing Up in an Egyptian Village* (1954) has some cogent comments on the civilizational matrix of child rearing and education in a village of the province of Aswan. Another volume in the series of studies on cultures and civilizations organized by Redfield and Singer is *Studies in Islamic Culture History* (Grunebaum, 1954). This volume, like the one on China, was issued as a memoir of the American Anthropological Association; its essays are not by anthropologists but are full of anthropological relevance.

In the field of European peoples and cultures, there is a volume, also not by an anthropologist although published in an anthropological series (that of the Wenner-Gren Foundation), which has relevance to our subject. It is Margaret T. Hodgen's *Change and History* (1952); the subtitle is "A Study of the Dated Distributions of Technological Innovations in England." It presents some cogent ideas about a way of handling the multifarious data of one aspect of a civilization. For other European countries, Métraux and Mead's *Themes in French Culture* (1954) is another product of the Contemporary Culture project; Turney-High's *Château-Gérard: The Life and Times of a Walloon Village* (1953) has attracted favorable notice; and J. A. Pitt-River's *The People of the Sierra* (1954) portrays the social structure of a rural community in the mountains of southern Spain. This last work is one of exceptional merit.

A welcome addition to Latin-American studies is Charles Wagley's *Amazon Town: A Study of Man in the Tropics* (1953). While the ecological stress is strong in the book, as the subtitle indicates, it also includes comparisons of the culture of the Amazon town with that of Plainville in the American midwest. The impingement of urban power-science influences on this tropical settlement is aptly shown. Two volumes, both edited by Sol Tax, also deal with the nature and influence of Western civilization in Latin America. They are *Heritage of Conquest* (1952) and *Acculturation in the Americas* (1952).

One of the preliminary reports of a team research enterprise in Puerto Rico led by Julian H. Steward is found in "The Cultural Study of Contemporary Societies: Puerto Rico" (1953) by Manners and Steward. This paper tells of some of the cultural differences which prevail among different communities of the island according to the crop grown—sugar, coffee, and tobacco.

Fernando Henriques' study of Jamaican society, *Family and Colour in Jamaica* (1953), includes considerations which extend widely beyond the bounds of family and race on this island.

Two works may be mentioned which are devoted to various cultural and social aspects of the development of "underdeveloped" peoples. The studies on them do not deal directly with the subject under our present consideration but they frequently offer implications for the understanding of Western civilization and of other complex cultures. One is the casebook, *Human Problems and Technological Change* (1952), edited by Edward H. Spicer. The other is *Cultural Patterns and Technical Change* (1954), edited by Margaret Mead and bearing the subtitle, "A Manual Prepared by the World Federation for Mental Health."

THE PROSPECTS FOR CIVILIZATIONAL STUDIES

The vigor of recent anthropological advances in the study of complex civilizations is reflected in the publications of even so short a period as 1952 through 1954. The advances have used several differing approaches and have deepened our understanding of various civilizations. A common element in most of these studies is the method of collecting the data and the conception of the main problem. E. E. Evans-Pritchard gives one view in his foreword (1954, p. x) to Pitt-Rivers' book on a Spanish community, ". . . what constitutes an anthropological study is not where or among what sort of people it is done but what is being studied and how it is being studied. What is being studied is a complicated set of interpersonal relations and the method of study is to get to know well the persons involved and to see and hear what they do and say . . . the problems investigated, though viewed only in relation to a small community, are fundamental problems of the larger society . . ."

Robert Redfield, in his introduction (1954, p. 4) to the symposium on community studies in Japan and China, amplifies a similar view of anthropological method and conception in the study of a civilized community. "It preserves the direct perception. At the same time, the maker of a community study, while retaining the 'holistic' human reality, strives to develop and to use methods that will qualify as scientific: he struggles to define the concepts for the characterization of this human whole, and he refines and submits to examination and criticism his procedures of observation, record, and analysis." These community studies, Redfield continues, show three main purposes. One is to ascertain the general and persisting character of the society and the culture; another is to obtain some guidance for practical action; the third is to understand the general nature of a selected class of social phenomena, as social structure with special interest in work groups or in godparent practices. He adds (p. 7) that anthropologists working with data from civilizations tend to provide fresh conceptual perspectives. "The humanistic student of China or of Japan does not ordinarily conceive of those civilizations as ecological system, social structure, or modal personality."

In our survey, we have seen how some of these purposes have been sought and how some of the grand concepts have been used. Warner's community studies, however their findings may later be amended or augmented, demonstrate the usefulness of direct observation and of a holistic conception. More such community studies, in various civilizations, will provide data to enhance the results of national culture studies like Lowie's. However much all of us, like Lowie, champion the comparative method, in this field we have as yet little material for making effective comparisons. Useful as is Lowie's clearing away of fallacies by revealing apt comparisons, it also has the merit of leaving the student of civilizations champing for more material fodder.

The results of the Benedict and Mead studies have offered up hypotheses to nourish theoretical development. Done "at a distance" they give promise of more potent hypotheses and more readily verifiable conclusions when such studies are carried on without the handicap of remoteness. The civilizations studied by archeologists must also be analyzed "at a distance": the procedures used by Benedict and Mead may turn out to have special pertinence for archeologists. We have not dealt with studies of the civilizations of antiquity in this survey, but this was for lack of space rather than lack of relevance.

Archeology, art history, political chronicles, novels—all the record of humankind is scanned in Kroeber's panoramic view. He is one of the very few who has seriously and systematically set himself to study the quality of civilization. In the long run, it may not be really of high importance whether his particular formulations, as of the disintegration and reconstitution of civilizations, are borne out by further research, or if his notions of value and style become generative of additional consequential concepts. If such turns out to be the case, so much the better. But perhaps the more significant fact is that he has opened a new door for anthropological theory: he has shown us the possibility of a new domain of strategic ideas which we had hardly perceived before.

To exploit this domain will take much spadework. In whatever context we may apply our methods of studying civilization, whether in the little community or in the vast reaches of a great tradition, it does us little good to perpetuate certain questionable notions about these methods. The notion that anthropological method was perfected on simple and static primitives and is best used in studying primitives is, as we have noted above, a misleading one. Anthropologists' insistence on the comparative method would come with better grace if that method were clarified, lucid examples given, its limitations defined. In a sense, all measurement is comparison: no analysis can well avoid comparison. There is need of sharper, positive comparisons plotted on a graph of social theory. The comments (1950, pp. 281, 282–283) of a political scientist, G. A. Almond, reflect the opinion of not a few social scientists about the recent anthropological trend. He notes that anthropologists "will discover when they turn to this sober task of analysis of modern society and international relations that there are other workers in the vineyard of the Lord who, though lacking in modern tools, have nevertheless developed certain rude formulae about when to come in out of the rain. . . . It is not that the anthropologist is incompetent to deal with modern cultures. His integrative concepts and hypotheses are of great fruitfulness, and his methods—combined with those of the social psychologist and psychiatrist—have an enormous potential value. But the specific interpretations of modern culture thus far made are significant not for their accuracy, but for their suggestiveness."

Almond's comments were made in a review of two books published in 1949. It may be said fairly that later efforts have contributed something in the way of accurate data as well as additional suggestive ideas. However, the image of anthropological studies of civilizations, as reflected in recent reviews by non-anthropologists, still tends to resemble Almond's depiction. Some anthropologists have already reacted defensively against certain calumnies which they perceive in that image, and it may be presumed that the critiques will have some benign effect on future research designs and on the clarity of exposition.

It is not unlikely that the increased research on civilized societies and cultures will have some general effects on the development of anthropological thinking. A discipline cannot but be affected by the medium in which it works, just as every art and every science is so affected. Certain immediate effects of this medium are apparent. For one thing, a piece of writing on a civilization usually rouses interest among members of the society analyzed and among scholarly specialists in that culture. Thus an author has the benefit, which he sometimes cannot be blamed for judging to be a dubious one, of having a battery of critical comment on his work.

Another effect is that such writings frequently are seen to have implications for practical programs. This can be a disadvantage, as when the anthropologist's energies are drained away to facilitate some specific action program. But it also holds the great advantage of exposing theoretical formulations to practical tests. The practical aspects usually keep theoretical thinking from settling into a repetitious rut, as may happen without such salutary contact with practicality.

In all, this anthropological effort has made a promising beginning and there is fair prospect for further research which will carry well beyond the beginning. The first products of an important research enterprise in civilizational study, that led by Robert Redfield and Milton Singer, have already appeared. Redfield has stated (in Wright, 1953, pp. vii-viii) the aim of this enterprise in these words:

> "Through critical analysis and testing of the methodology of comparative cultural studies, through the exploration by groups of specialists of new methods for making the systems of thought and value of the major civilizations more nearly intelligible to one another, and through the encouragement of original research whose methods are likely to have a wide cross-cultural applicability, we hope to achieve, not yet a unified science of cultures, but at least a set of coordinates within which we can order and evaluate the studies already made, a framework of concepts and hypotheses to direct future research, and possibly some new and valid methods for characterizing and comparing cultures."

These are worthy hopes for future achievement. The studies we have surveyed show that past accomplishments provide foundation and justification for this prospect.

REFERENCES

ALMOND, GABRIEL A.
1950 "Anthropology, Political Behavior, and International Relations," *World Politics*, Vol. 2, pp. 277–284.

AMMAR, HAMED
1954 *Growing Up in an Egyptian Village*. London: Routledge and Kegan Paul, Ltd. 316 pp.

BARNOUW, VICTOR
1954 "The Changing Character of a Hindu Festival," *American Anthropologist*, Vol. 56, pp. 74–86.

BEALS, RALPH L.
1952 "Acculturation, Economics and Social Change in an Ecuadorean Village," *Proceedings of the International Congress of Americanists*, Vol. 29, pp. 67–73.

BEN-EZRA, A.
1953 Review of *Life is with People* by M. Zborowski and E. Herzog, *Jewish Social Studies*, Vol. 15, pp. 183–185.

BENEDICT, RUTH
1946 *The Chrysanthemum and the Sword*. Boston: Houghton Mifflin. 316 pp.

BENNETT, JOHN W. *et al.*
1952–1953 *Research in Japanese Social Relations* (Reports 1 through 7). Columbus: The Ohio State University Research Foundation. mimeo.

BENNETT, JOHN W. and NAGAI, MICHIO

1953 "The Japanese Critique of the Methodology of Benedict's *Chrysanthemum and the Sword*," *American Anthropologist*, Vol. 55, pp. 404–411.

CAHNMAN, WERNER J.

1952 Review of *Life is with People* by M. Zborowski and E. Herzog. *American Sociological Review*, Vol. 17, pp. 655–656.

CAUDILL, WILLIAM

1952 *Japanese American Personality and Acculturation* (Genetic Psychological Monographs, Vol. 45, Part I). 102 pp.

DECTER, MOSHE

1952 "The 'Old Country' Way of Life," *Commentary*, Vol. 13, pp. 600-604.

DUBE, S. C.

1954 *Indian Village*. London: Routledge and Kegan Paul, Ltd. 248 pp.

FEI HSIAO-TUNG

1953 *China's Gentry: Essays in Rural-Urban Relations* (Revised and edited by Margaret Park Redfield with six life-histories by Yung-teh Chow). Chicago: University of Chicago Press. 290 pp.

FOSTER, GEORGE M.

1953a "*Cofradia* and *Compadrazgo* in Spain and Spanish America," *Southwestern Journal of Anthropology*, Vol. 9, pp. 1–28.

1953b "What is Folk Culture?," *American Anthropologist*, Vol. 55, pp. 159–173.

FRIED, MORTON H.

1952 "Chinese Society: Class as Sub-Culture," *Transactions of The New York Academy of Sciences*, Series II, Vol. 14, pp. 331–336.

1953 *Fabric of Chinese Society*. New York: Fredrick A. Praeger, Inc. 243 pp.

GILLIN, J.

1952 "Modern Cultural Development and Synthesis in Latin America," *Proceedings of the International Congress of Americanists*, Vol. 29, pp. 221–223.

GOUGH, KATHLEEN E.

1952 "Changing Kinship Usages in the Setting of Political and Economic Change among the Nayars of Malabar," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXXII, pp. 71–88.

GRUNEBAUM, G. E. VON

1954 *Studies in Islamic Culture History* (Comparative Studies of Cultures and Civilizations, No. 2; Memoir of the American Anthropological Association No. 76). 60 pp.

GULICK, JOHN

1953 "The Lebanese Village: An Introduction," *American Anthropologist*, Vol. 55, pp. 367–372.

HENRIQUES, FERNANDO M.

1953 *Family and Colour in Jamaica*. London: Eyre and Spottiswoode. 196 pp.

HODGEN, MARGARET

1952 *Change and History* (Viking Fund Publications in Anthropology No. 18). New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 324 pp.

HSU, FRANCIS L. K.

1952 *Religion, Science and Human Crises*. London: Routledge and Kegan Paul, Ltd. 142 pp.

1953 *Americans and Chinese: Two Ways of Life*. New York: H. Schuman. 457 pp.

KARVE, IRAWATI

1953 *Kinship Organization in India* (Deccan College Monograph Series: 11). Poona: Deccan College Post-graduate and Research Institute. 304 pp.

KAWASHIMA, T.

1949 "Hyoka to Hihan (Evaluation and Criticism)," *Minzokugako Kenkyu* (The Japanese Journal of Ethnology), Vol. 14, pp. 263–270. Tokyo.

KROEBER, A. L.

1952 *The Nature of Culture*. Chicago: University of Chicago Press. 438 pp.

1953 "The Delimitation of Civilizations," *Journal of the History of Ideas*, Vol. 14, pp. 264–275.

Lewis, Oscar

1952 "Urbanization without Breakdown: A Case Study," *Scientific Monthly,* Vol. 75, pp. 31–41.

Lindemann, Helmut

1954 "Im Fremden Spiegel," *Stuttgarter Zeitung,* August 27, p. 3.

Lowie, Robert H.

1954 *Toward Understanding Germany.* Chicago: University of Chicago Press. 396 pp.

Mandelbaum, David G.

1955 (In press) *Change and Continuity in Jewish Life.* Glencoe, Ill.: Library of North Shore Temple Israel.

Manners, Robert A. and Steward, Julian

1953 "The Cultural Study of Contemporary Societies: Puerto Rico," *American Journal of Sociology,* Vol. LIX, pp. 123–130.

Mayer, Adrian

1952 *Land and Society in Malabar.* Bombay: Oxford University Press. 158 pp.

Mead, Margaret

1954 "The Swaddling Hypothesis: Its Reception," *American Anthropologist,* Vol. 56, pp. 395–409.

Mead, Margaret (ed.)

1954 *Cultural Patterns and Technical Change.* New York: Columbia University Press. 348 pp.

Mead, Margaret and Métraux, Rhoda (eds.)

1953 *The Study of Culture at a Distance.* Chicago: University of Chicago Press. 480 pp.

Métraux, Rhoda and Mead, Margaret (eds.)

1954 *Themes in French Culture: A Preface to a Study of a French Community.* Stanford: Stanford University Press. 120 pp.

Miller, Eric J.

1954 "Caste and Territory in Malabar," *American Anthropologist,* Vol. 56, pp. 410–420.

Miller, Robert J.

1953 "Areas and Institutions in Eastern Asia," *Southwestern Journal of Anthropology,* Vol. 9, pp. 203–211.

Morgenthau, Hans J.

1954 Review of *Toward Understanding Germany* by Robert H. Lowie, *Chicago Sunday Tribune,* "Magazine of Books," May 2, p. 2.

Norbeck, Edward

1952 "Pollution and Taboo in Contemporary Japan," *Southwestern Journal of Anthropology,* Vol. 8, pp. 269–285.

1953 "Age-Grading in Japan," *American Anthropologist,* Vol. 55, pp. 373–384.

1954 *Takashima: A Japanese Fishing Community.* Salt Lake City: University of Utah Press. 232 pp.

Opler, M. E. and Singh, R. D.

1952 "Economic, Political and Social Change in a Village in North Central India," *Human Organization,* Vol. 11, Summer, pp. 5–12.

Padover, Saul K.

1954 Review of *Toward Understanding Germany* by Robert H. Lowie, *The Saturday Review,* May 1, p. 40.

Patai, Raphael

1952a Review of *Life is with People* by M. Zborowski and E. Herzog, *American Anthropologist,* Vol. 54, pp. 543–545.

1952b "The Middle East as a Culture Area," *Middle East Journal,* Vol. 6, Winter, pp. 1–21.

1953 *Israel Between East and West.* Philadelphia: The Jewish Publication Society. 348 pp.

1954 "Religion in Middle Eastern, Far Eastern and Western Culture," *Southwestern Journal of Anthropology,* Vol. 10, pp. 233–254.

Pitt-Rivers, J. A.

1954 *The People of the Sierra.* London: Weidenfeld and Nicolson; New York: Criterion Books. 232 pp.

Redfield, Robert; Fried, M. H.; and Beardsley, R. K.

1954 "Community Studies in Japan and China: A Symposium," *The Far Eastern Quarterly*, Vol. 14, pp. 3–53.

Redfield, Robert and Singer, Milton

1954 "The Cultural Role of Cities," *Economic Development and Cultural Change*, Vol. 3, pp. 53–73.

Schull, William J.

1953 "The Effect of Christianity on Consanguinity in Nagasaki," *American Anthropologist*, Vol. 55, pp. 74–88.

Shimkin, D. B.

1952 "Industrialization, a Challenging Problem for Cultural Anthropology," *Southwestern Journal of Anthropology*, Vol. 8, pp. 84–91.

Shimkin, D. B. and Sanjuan, P.

1953 "Culture and World View: A Method of Analysis Applied to Rural Russia," *American Anthropologist*, Vol. 55, pp. 329–348.

Spicer, E. H. (ed.)

1952 *Human Problems in Technological Change*. New York: Russell Sage Foundation. 361 pp.

Srinivas, M. N.

1952 *Religion and Society among the Coorgs of South India*. London: Oxford University Press. 267 pp.

Tax, Sol and others

1952 *Heritage of Conquest* (Viking Fund Seminar on Middle American Ethnology). Glencoe, Ill.: The Free Press. 312 pp.

Tax, Sol (ed.)

1952 *Acculturation in the Americas* (Proceedings and Selected Papers of the XXIXth International Congress of Americanists). Chicago: University of Chicago Press. 339 pp.

T'ien Ju-k'ang

1953 *The Chinese of Sarawak: A Study of Social Structure* (Monograph on Social Anthropology XII). London: London School of Economics and Political Science. 88 pp.

Tumin, Melvin M.

1952 *Caste in a Peasant Society: A Case Study of the Dynamics of Caste*. Princeton: Princeton University Press. 300 pp.

Turney-High, H. H.

1953 *Château-Gérard: The Life and Times of a Walloon Village*. Columbia: University of South Carolina Press. 297 pp.

Wagley, Charles (ed.)

1952 *Race and Class in Rural Brazil*. New York: Columbia University Press. 160 pp.

Wagley, Charles

1953 *Amazon Town: A Study of Man in the Tropics*. New York: Macmillan Co. 305 pp.

Warner, W. Lloyd

1953 *American Life: Dream and Reality*. Chicago: University of Chicago Press. 268 pp.

Willems, Emilio and Mussolini, Gioconda

1953 *Buzios Island: A Caiçara Community in Southern Brazil* (Monographs of the American Ethnological Society XX). Locust Valley, N. Y.: J. J. Augustin. 117 pp.

Wright, Arthur F. (ed.)

1953 *Studies in Chinese Thought* (Comparative Studies of Cultures and Civilizations, No. 1; Memoir of the American Anthropological Association, No. 75). 317 pp.

Zborowski, Mark and Herzog, Elizabeth

1952 *Life is with People*. New York: International Universities Press. 456 pp.

Universality and Variation in Human Nature

W. W. HOWELLS

Dr. Howells is Professor of Anthropology at Harvard University, Cambridge, Massachusetts. He has been President, 1951, of the American Anthropological Association, and Editor, 1949–1954, of the American Journal of Physical Anthropology. He was recipient of the 1954 Viking Fund Medal in Physical Anthropology. His works include: Mankind So Far, 1944; The Heathens: Primitive Man and His Religions, 1948; and Back of History: The Story of Our Own Origins, 1954.

THERE are two ways of regarding human nature and universal aspects of it: from outside the species and from within it, or from the point of view of its distinctive, universal traits versus that of the variation of its members, as human beings. We know that all normally developed men are capable of cultured behavior, and we know that all normally developed men have non-opposable great toes. These are just the universals we need not consider, because they imply nothing more as to differences among men within the communality of human nature. Rather, it is the scale and range of human differences within likeness which I wish to consider.

This is not to deny the great, and still growing, importance of defining and delimiting general human nature. This problem promises to go on bringing closer together the interests of physical and cultural anthropologists. I need not argue this, but only point to LaBarre's new book, *The Human Animal* (1954), as a perfect demonstration of this convergence, or to the attention which Kroeber has been giving to the same matter in recent talks. But the other problem, that of differences among men in their specifically human traits, is perhaps the encompassing problem in the study of the living species, and this also promises to bring the physical and cultural anthropologists more closely together in the maturity of anthropology. This problem has a history.

THE STUDY OF THE TYPE

Physical anthropology and craniology arose from the interest in racial differences, and the fact that different groups of mankind differed strikingly in skull or skin color. For a long time anthropology occupied itself in describing these groups and setting them off against one another, at first fairly simply and without scruples reflecting an awareness of culture, using skin, hair, and the index of the head, then in more complicated fashion, as calipers became standard baggage and the great collections of crania began, and rudimentary statistics appeared. As measurement after measurement was added, the list of ways in which racial groups might be compared became long, and at last unwieldy. Main identifications were made, and major types set off early in the game, including the Mincopies of Andaman. More detailed work and batteries of measurements went into the attempt to sort out, segregate, make distinct, the varying racial strains of a limited area, showing what could be done by the best of these methods in such a work as Coon's *Races of Europe*.

The snuff-and-quill-pen stage, during which the monogenesis-polygenesis controversy flourished, thus was succeeded by a white-coat-and-pince-nez stage. During this there were discerned such named types as Nordic, Alpine, and Mediterranean, taken ideally to have been pure races, now blurred to vision by long-standing mixture. This dressy scientific view was being used to make respectable some very disreputable ideas, at the hands of racists, beginning with Lapouge. Any Nordic was better than any Alpine. In any case, early and late, the assumption was that the range of human variation was wide, that the differences within populations or races were small, and the differences between them large, running as far as the opinions of those who held that living races had completely separate pre-human origins, perhaps identifiable as the orang, the chimpanzee, and the gorilla.

But most of the anthropologists were not as foolish as these racists and polygenists. Still, their honest endeavors to use more and more descriptive traits—a natural extension of previous work—to establish and discriminate minor racial groupings, to bring order out of chaos, and bring racial history forward into the light, met with difficulties and bafflement from sheer weight of measurements. They, unlike the racists, took notice of the variations in their populations and measured it with the standard deviation. Consciously or not, however, they resisted this disturbing *Abweichung*, which seemed like a deviation, or a dereliction, from the type in more than a statistical sense. They were looking for the type itself, the mean, the golden mean. Frustrated by the failure of the wealth of cranial measurements to reproduce the whole, Crewdson Benington (1911) devised a satisfactory though laborious way of arriving at some of the mean contours of the skull and drawing them. The urge to find the type was very strong.

The ethnologists had been doing something not entirely different. More slowly, they had been finding that different groups had different cultures, and describing those cultures as if they had ideal, pristine forms. But they were also finding the common things in culture and, finally, discovering the general nature of culture itself as a phenomenon and as a determiner of human behavior. They were too late to forestall the excesses of the racists, and in fact arrived just in time to provide a basis for criticisms of the early students of comparative intelligence.

Thus there has been a long trend in physical anthropology of searching for the type, eventually supplemented, and more and more supplanted, by attention at last to the individuals, and by exploitation of the variation, a new idea. This shift in trend came from two sources, or so I would argue.

THE TURN TO THE INDIVIDUAL

One is to be found in the limitations of the type concept itself, and failure to do much with measurements beyond finding their averages; hence the tailoring up of that dummy, the type. These limitations were too much for someone with the mental energy of Hooton, who was interested in races, but in much more than races. It was his impatience with the unfruitfulness of types and measurements as a means of systematic study of the individual which caused him to welcome and champion Sheldon's system of body typing, and to proceed with development and experimentation of his own along this line.[1] For anthropology, Sheldon's contribution certainly has been the notion of "components" of physique: a few general, major aspects of an individual's development, shape and body composition, each ruling a principal category of deviation, and, by their more or less independent contributions or emphases in the whole, determining the entire range of body type or shape. It is a system which sums up physique for any individual descriptively and simply; and whether Sheldon is approximately correct in his own rather formalized development of it is probably not of eventual importance. He does in fact seem to be describing something real and recognizable, although, insofar as it is different simply from muscle and fat, it is something which is waiting better identification before it will be of theoretical value. It has not yet, I should say, produced a basis for forward steps in physical anthropology, because it has not yet provided itself with the necessary anchor points in physiology, genetics, or embryology to make it a firm step in itself. Nevertheless, it has introduced a way of describing individuals which was beyond the best efforts of straight individual measurements (cf. Benington's contours, above), at a time when something of the sort was needed by anthropology; and it makes a suggestion of great theoretical and practical worth in itself, that of certain principal components determining, or highly correlated with, many other features or measurements which otherwise would be assessed each by itself without formal recognition of their interconnections. And it is certain that this approach will be developed along other lines—that Sheldon's particular components will be amplified, substituted for, or made explicit, by studies of how the actual constituents of the body—the skeleton, fat, muscle and fluids—are distributed, and how they vary, together and independently. Put most generally, this whole approach, and indeed the key to the study of the individual, consists in finding the cardinal directions, the principal axes of physical variation.

---

[1] This had long been clear to the writer, but Hooton said as much himself in June 1952 during discussion at the Wenner-Gren Foundation's International Symposium on Anthropology, and in "Your Body and Your Life" (mss., F. L. Stagg co-author).

The other source is the coming of age of human genetics. This, paradoxically, had to emerge from its concern with the individual and to develop its population aspects before it could suggest the reverse idea to anthropology: that a race or population was not a type, but a continuing body of significantly varying individuals. The genetic debut began somewhat naively also, by looking first for general blood group distinctions among the major racial stocks or geographical areas and, not finding them, going on in the hope of establishing blood group "races." This outlook was similar to the traditional one depending on skin, hair, and the cephalic index, but it had the advantage of using traits of known and simple genetic basis, and of an unprejudicial, apparently non-adaptive nature, as it was then supposed. The more advanced of these classifications gave signs of converging on those using the old-fashioned criteria.

Beyond this, however, genetics had a strong and healthy influence on the general view, by pointing to the essential transmissibility of genes at the borders of populations, and thus to the intergradation of racial groups as a natural thing, instead of letting it seem like an obnoxious, unnatural factor, i.e. hybridization, which, like variation, tended to obscure the clearcut outlines of original "types." (The conception was briefly overemphasized, with assertions or implications that there was therefore no such thing as race at all.) Another contribution was the suggestion that, out of the many thousand gene pairs on the human chromosomes (40,000 to 44,000 has been estimated), only a small percentage (5 or 10 per cent?) contain alleles differing in kind or proportion from race to race. This seems fair enough as a point of view, though not as a datum, as long as it does not imply that there are categories of racial versus non-racial genes.

THE RANGE OF ADAPTATION IN PHYSIQUE

For we are here at a point important in our present understanding of race. What has become of "racial" traits? They used to be simple enough to define: they were the physical features in which races differed. It was thought advantageous in classification to use those which were supposedly not adaptive or responsive to the environment, and thus most likely to be inherited unchanged from generation to generation (e.g. not body fat, or color which might come from tanning); otherwise the study of racial history or race mixture would be a hopeless task. The geneticists expressed the doubt that the obvious external, varying traits were as "non-adaptive" as they seemed, even if the nature of the mode of the adaptation involved could not be shown; and they thus argued their point that the genetically simple antigens were the criteria to use in place of the possibly adaptive traits of skin, hair, eye color, and so on. At the moment, however, it is suddenly beginning to look as though these blood characteristics are manifestations of strongly adaptive features themselves, and readily sensitive to selective processes. The sickling trait, in its heterozygous state, may confer, or be related to, an immunity to malaria (Allison, 1953a, b, 1954); and the ABO antigens seem also to be related to certain susceptibilities or resistances. Individuals of group O appear to have a strikingly greater susceptibility to peptic ulcer and to toxemia of pregnancy, or perhaps the A and B substances provide some protection against these afflictions (Aird and others, 1954; Pike and Dickins, 1954); and group A is significantly more common among victims of cancer of the stomach (Aird and others, 1954); furthermore, certain apparent fertility differences have been noted over a long time, particularly one working to the disadvantage of group O wives of group A men. If, therefore, the sickling trait is characteristic of certain environments because of malaria, instead of being characteristic of certain racial strains because of mutation and drift, or chance, it can hardly be used as a marker of such racial strains, or to trace migrations from Asia to Africa of a hypothetical component of the African Negro population, as has been suggested. In any case, instead of exemplifying neutral, non-adaptive, single-gene traits under the action of chance factors, these blood systems are now promising to provide examples of the more important phenomena of selection, and in particular, of adaptive or balanced polymorphism.

In this, apparently illustrated by the sickling gene, and strongly suggested at least by the distributions of ABO (Brues, 1954) and MN, heterozygosity confers a benefit on the individual or on the species, even if a homozygote is essentially lethal, as is the case with the sickling gene. Thus this gene was a beneficial mutation in the presence of endemic malaria, though a gene which should be eliminated through negative selection in another environment or population. There are other ways in which polymorphism, or the maintenance of different alleles, may benefit a population; evolutionists have been increasingly aware of the significance of the phenomenon as a source of materials for rapid change or microevolution, and that such a fund of genetic variability is a protection for a species or population in the capacity it provides for such rapid change or adaptation (Dobzhansky, 1951; Cain and Sheppard, 1954).

What does all this mean to race in man? It involves no radically new viewpoints, but does seem to bring to a culmination some previous trends of opinion. The latest developments emphasize adaptation as a cause of racial differentiation more strongly than its fondest advocates might have dared, shortly before, when the best arguments were that it stood to reason, and when there was no actual indication that blood group proportions did not vary simply by drift.[2]

More and more useful evidence of many kinds is coming to hand. Brown and Page (1952) found that Eskimos could maintain a higher blood flow in the hand immersed in water at varying temperatures than could Whites. Is this a personal adaptation, attained during life, or is it a "racial," genetic difference? Todd and others (1940) found the eyeball of American Negroes to be significantly larger—on the order of 8% or more—than that of American Whites (and Karpinos, 1944, demonstrated higher grades of visual acuity in the records of Negro draftees for a selected period, believed to be independent of stringency of military selection). Is this significant, and adaptive? This eye difference does not seem to be connected embryologically with skin differences. Roberts (1952, 1953a, b) has shown statistically that Bergmann's and Allen's rules hold for man: heat production measured in different populations is correlated (inversely) with mean external temperature, and body weight and shape accommodate themselves to this also by the adjustment of body tissue and body surface. Not only is there a general world-wide relation to temperature, which might reflect rapid adjustment of a generalized population to local conditions, but also there are residual differences distinguishing racial groups. Newman (1953) has dealt with these and related physical features for American Indian material, to suggest relatively recent adaptation in form among New World populations (i.e., within the limits of the period of occupation by them). Coon (1954) has reviewed much of the literature bearing on adaptation in racial features, especially skin, and relative size of trunk and extremities. In the nature of a supplement to his book *Races* (with Garn and Birdsell, 1950), this article in particular relates types of man to types of climate, applying Bergmann's, Allen's, and Gloger's rules[3] to specific cases, and stressing heat control not only through surface-mass relations, but also through mechanisms of the distribution of blood supply and of perspiration areas, etc.

---

[2] This proposition, of purely random drift of blood group proportions, was not necessarily taken for granted by geneticists, e.g., Stern, 1949; Boyd, 1953.

Coon ends by observing, "what a wonderfully adaptive thing the human body is," and viewing comprehension of this as, "a much healthier commodity than the recently traditional hide-race point of view." This leads us back to the general question of human variability and its meaning. Perhaps it is possible to avoid opposing "genetic" concepts of race to "old-fashioned" concepts, and instead, to expand the latter—since races, after all, do exist—by taking a more general viewpoint based upon the former. This again is not a new suggestion, but the emphasis has been modified from year to year, and that is what we may anticipate in the future. For the present, we may emphasize the universality of the human genetic heritage and explore it most usefully by using race as one way (this is what Coon is talking about) of studying its dimensions. The change in viewpoint lies in trying to view the total range at once, in appreciation of the variation within it, rather than trying to isolate a race here or a race there, as the taxonomic equivalent of a cigar-store Indian.

It is to be hoped that genetically well-understood traits of general distribution will shortly begin to multiply. Discovery of useful blood antigens has progressed rapidly, and if the ABO groups, or the sickling trait, or others are actually selectively influenced to a strong degree, that is a gain, not a loss, in spite of any disappointment in their use for the study of racial history. Other physiological traits are on the horizon, such as might be used to study patterns of individual or group variation (see Williams, 1953). Excretion constituents seem especially promising (Berry, 1953; Sutton and Vandenberg, 1953), providing complex patterns, relatively constant for an individual, and suggesting that the genetic basis may turn out to be sufficiently clear to make them a most useful tool. Harris and others, from family studies, have found indications that a single gene pair controls distinguishable grades of excretion of beta-aminoisobutyric acid (Harris, 1953; Calchi-Novati and others, 1954), which is only one of a sizeable number of substances in urine which may be studied by the relatively simple technique of paper chromatography. An important field still to be opened is that of linkage. In spite of the growing number of satisfactorily established and common single gene traits, known linkages, apart from the sex chromosomes, are still almost a blank: only two plausible examples obtain, that linking the Rh locus with the uncommon, and therefore not particularly useful, trait of elliptocytosis (Lawler and Sandler, 1954 and previous papers), and that linking the Lewis and the Lutheran blood antigen systems (Mohr, 1951).[4] As to the genetics of continuously varying measured traits in man, this is terra incognita (cf. Dobzhansky and Wallace, 1954).

With more precise knowledge of the nature of traits under investigation, and future developments in line with recent ones, it will be more reasonable to make statements and assessments of what is modal for man, and what is extreme, specialized or highly adapted. That is, it should be more meaningful to consider which kind of race or population is more generalized or genetically amorphous, and which has moved to a peripheral position, so to speak, through adaptive pressure of some kind. Mead (1954) says "The common anthropological assumption of the psychic unity of mankind is that a child at birth is equally capable of learning any natural language and of coming to embody any human culture," so that such children "are capable of becoming equally complete representatives of Eskimo, Mexican, Siamese, French or Russian culture. . . ." I quote this "psychically" proper statement, an expression of the universality of human nature which is the point of my discussion, only to be perverse, and to query whether an infant Nilotic Negro could in fact become a "complete" representative of Eskimo culture, and vice versa, or whether he would die trying. And have these two culture-environments put a really extreme pressure on the adaptation potential of the human species of recent times, and on rates of evolution through genetic segregation of existing material, or have actual mutations provided new adaptations?[5] If, as Coon (1954) suggests, the original and central genetic heritage of hairless man was a tannable skin of varying middle grades of pigmentation, how much of an excursion from this is the development of a "black" skin, and what rate of change is possible? Or the same for a fat-masked Eskimo face, with a skeletally recessed nose? How rapidly can body shape change? Dobzhansky has often defined races as populations differing in the *incidence* of certain genes; should this be taken to mean that the genetic material for the whole human range is present in at least some generalized populations (like the various blood type genes), or are there actually any race-limited genes? These are interesting questions, not new, but becoming more useful. (More information about them should resolve, along the way, questions as to whether different racial stocks descend from different fossil forms, as Weidenreich held, or whether *Homo sapiens* might have evolved from the Neanderthal line within Wurm times).

---

[3] These deal with variations among kindred species or populations connected with heat economy: surface/mass relations, relative size of extremities, and color of fur or feathers, respectively.

[4] Kloepfer, 1946, produced statistical evidence of possible linkages between certain morphological traits, but a similar investigation by the writer (in preparation) did not support Kloepfer's findings where the traits used corresponded, and did not turn up other promising linkages.

At any rate, as the understanding of adaptability, and the connected essential genetic variation in any population, goes up, the idea of neat fundamental distinctions among racial groups goes down. For the genetic explanation of variability destroys the idea of group homogeneity and emphasizes human universality. And still none of this should vitiate the reality of group or individual differences, as some have insisted, for it is the strong genetic determination of individual differences which is at the center of the whole business.

ADAPTATION AND BEHAVIOR

What about differences leading to behavior, in intelligence or personality? Racists were much interested in this—in group differences—but plainly the only information of which we could make scientific use will lie in the variation of the individuals within one culture and one population or race. Were we able to establish such differences between races, it would be a sterile finding except as we could again apply the knowledge to the variety within a group, i.e., that of the individuals.

In practical affairs, we proceed on the assumption that intelligence differs natively in degree and in kind. Children, progressing through school and into college, are formally tested for aptitudes and relative intellectual development, aside from school grades, and are assorted or advised, to varying extents, accordingly. But the scientific element, which is anthropology's interest, is certainly less than could be desired. The enthusiastic measurement of "racial" differences by some form of an I.Q., thirty years back, shortly generated its own correctives (see especially Klineberg, 1931, 1935) and subsided. Nevertheless, using the same kind of measure, Burks (1938; also Wright, 1931) and Newman, Freeman, and

---

[5] Kroeber suggested the same kind of view, of appreciating the bounds of human nature through known extremes of culture forms, in a recent talk in Cambridge, Massachusetts.

Holzinger (1937) were able to show that heredity was accountable for a very large proportion of the individual differences in I.Q. scores; these studies were the high water mark of efforts in this particular direction (see also Hogben, 1933). At the same time, comparative work with such tests was becoming continually less satisfactory as a measure of native intelligence (Davis and others, 1951). It becomes clear that the missing element in all this is any explicit conception of what "intelligence" may be, and that is just the point which the usual "I.Q." schedules beg, since these are generalizing tests, assuming that geometric, numerical, and verbal abilities should be averaged out. They accept Spearman's "g" factor at the beginning, while other psychologists working in the opposite direction have been satisfying themselves of the existence of a number of independent mental factors of faculties (Vernon, 1950).

Fresh air seems to be blowing on the matter from experimental work with animals (Scott, 1953; Fuller and Scott, 1954). Quotes from the first article cited will convey the possibilities:

> "The conclusion must be drawn that the fruitful way to analyze behavior in terms of genetics is through specific processes rather than through overall adaptation or 'intelligence' . . . the actual situation appears to be one in which each individual may have dozens of capacities which are independently inherited and all of which may modify his behavior. Once the individual is faced with a situation demanding adaptation, he organizes these capacities in such a way as to produce an adjustment. Another individual with a different set of capacities may meet the same situation equally well by organizing his different capacities in another way. The task of geneticists and psychologists is to discover and measure these basic capacities. . . . The general theoretical picture is that an individual has within him a very large number of physiological processes, each independently affected by heredity and all of which may go into his behavior. . . . clear-cut genetic results can be expected in the study of behavior only where a trait is measured which is either a physiological process or largely based

The advantages of this sort of approach are various and sizeable. Greater latitude for comparison is available if different species may be used, or different breeds of dogs. Viewing "intelligence" as adaptability to situations lessens the formal intellectual emphasis without deprecating human mentality at all. Rather, this admits as factors of intelligence those social and behavioral capacities that have always been so impressive—and perhaps not yet adequately recognized—in the studies of primates. Thus it suggests that "intelligence" must be looked on as a panel of faculties ranging from the most formal intellectual traits of which man is capable, into traits which are primarily in the categories of emotion or personality, without making a line anywhere to correspond to what we usually think of as the limits of "mental" qualities. Finally, such an individualizing of faculties fits genetic theory as no notion of general intelligence ever did.

What about differences in personality? It is to be hoped and expected that traits of native "personality," along with specific traits of intelligence, eventually will permit identification and measurement, and genetic study of their variation, in precise terms. After all, it is only repeating one of Darwin's basic assumptions to point out the following, about either personality or intelligence. If there were not even the suggestions we already have of individual genetic differences, these still would have to be postulated. For human personality and intelligence can have arisen only through human evolution, and evolution can take place only through the genetic variation of the individuals of the species.

The path ahead already has been suggested, and the convergence of biological and cultural studies demonstrated, in the papers assembled by Kluckhohn and Murray for *Personality in Nature, Society, and Culture* (1953). In any case it would appear inevitable that students of personality and culture must come into this area in the end. For they will not have all their solutions until they know more about the biological basis of personality, meaning its precise modes and range of variation, which will in the long run call for understanding of the genetics involved, as a means of proving the reality of the elements under consideration. This is one area, then, where physical and cultural anthropology must certainly come together, since their interests will lie closer in these matters, and genetics appears to be a major key by which the exact nature of anything having a biological basis must be analyzed. It is, of course, much too early for such a rapprochement now, and physical and cultural anthropologists therefore work apart, without a great deal to communicate from day to day. But it is not too early to be aware of crossing paths ahead, since this is important to the nature of the whole science of anthropology. Furthermore, one major change has taken place in anthropology: the transfer of interest from the group to the individual, in physical anthropology away from the racial type, and in cultural away from the simple model culture of a group, above all, in the appearance of the "culture and personality" field. This in itself is, we believe, a necessary step in any move toward common ground.

At the moment, then, one general problem before the profession is that of trying to see the scale of variation in man, and of trying to keep this view up to date; of looking more earnestly for the significant points of variation in human beings, as distinguished from the superficial or the conveniently observed ones; of finding ways of describing these variations precisely, i.e., of scaling them; and of testing them eventually for reality through their behavior in inheritance.

REFERENCES

ALLISON, A. C.

1953 "Protection afforded by the sickle cell trait against subtertian malarial infection," *British Medical Journal*, pp. 290–294.

1954a "The distribution of the sickle cell trait in Africa and elsewhere, and its apparent relation to the subtertian malaria," *Transactions of the Royal Society for Tropical Medicine and Hygiene*, Vol. 48, No. 4, pp. 312–318.

1954b "Notes on sickle-cell polymorphism. With statistical appendix by SHEILA MAYNARD SMITH," *Annals of Human Genetics*, Vol. 19, pp. 39–57.

AIRD, IAN; BENTALL, H. H.; MEHIGAN, J. A.; and ROBERTS, J. A. FRASER

1954 "The blood groups in relation to peptic ulceration and carcinoma of colon, rectum, breast and bronchus," *British Medical Journal*, No. 4883, August 7, pp. 315–321.

BENINGTON, R. CREWDSON

1911 "Cranial Type-contours," *Biometrika*, Vol. 8, parts I and II, July, pp. 123–201.

BERRY, HELEN KIRBY

1953 "Variations in urinary excretion patterns in a Texas population," *American Journal of Physical Anthropology*, Vol. 11, No. 4, pp. 559–575.

BOYD, WILLIAM C.

1953 "The contributions of genetics to anthropology," pp. 488–506, in Kroeber A. L. and others, *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

BROWN, G. MALCOLM and PAGE, JOHN

1952 "The effect of chronic exposure to cold on temperature and blood flow of the hand," *Journal of Applied Physiology*, Vol. 5, pp. 221–227.

BRUES, ALICE

1954 "Selection and polymorphism in the ABO blood groups," *American Journal of Physical Anthropology*, Vol. 12, No. 4, pp. 559–597.

BURKS, BARBARA S.

1938 "On the relative contributions of nature and nurture to average group differences in intelligence," *Proceedings, National Academy of Sciences*, Vol. 24, No. 8, pp. 276–282.

CAIN, A. J. and SHEPPARD, P. M.

1954 "The theory of adaptive polymorphism," *The American Naturalist*, Vol. LXXXVIII, No. 842, pp. 321–326.

CALCHI-NOVATI, CARLA; CEPPELLINI, R.; BIANCHO, IDA; SILVESTRONI, E.; and HARRIS, H.

1954 "β-Aminoisobutyric acid excretion in urine. A family study in an Italian population," *Annals of Eugenics*, Vol. 18, pp. 335–336.

Coon, Carleton

1954 "Climate and race," pp. 277–298 in *Annual Report of the Smithsonian Institution, 1953*. Washington, D. C.: U. S. Government Printing Office.

Coon, Carleton S.; Garn, Stanley M.; and Birdsell, Joseph B.

1950 *Races. A Study of the Problems of Race Formation in Man*. Springfield, Ill.: Charles C. Thomas. 153 pp.

Davis, Allison (chairman); Eells, Kenneth; Davis, Allison; Havighurst, Robert J.; Herrick, Virgil E.; and Tyler, Ralph

1951 *Intelligence and Cultural Differences*. Chicago: University of Chicago Press. 388 pp.

Dobzhansky, Th.

1951 *Genetics and the Origin of Species*. 3rd ed. New York: Columbia University Press. 364 pp.

Dobzhansky, Theodosius and Wallace, Bruce

1954 "The problem of adaptive differences in human populations," *The American Journal of Human Genetics*, Vol. 6, June, pp. 199–207.

Fuller, John L. and Scott, J. P.

1954 "Heredity and learning ability in infrahuman mammals," *Eugenics Quarterly*, Vol. I, No. 1, pp. 28–43.

Harris, H.

1953 "Family studies on the urinary excretion of β-aminoisobutyric acid," *Annals of Eugenics*, Vol. 18, pp. 43–49.

Hogben, Lancelot

1933 *Nature and Nurture*. New York: W. W. Norton. 143 pp.

Karpinos, Bernard D.

1944 "Visual acuity of selectees and Army inductees," *Human Biology*, Vol. 16, pp. 1–14.

Klineberg, Otto

1931 "A study of psychological differences between 'racial' and national groups in Europe," *Archives of Psychology*, No. 132.

1935 *Negro Intelligence and Selective Migration*. New York: Columbia University Press. 66 pp.

Kloepfer, H. W.

1946 "An investigation of 171 possible linkage relationships in man," *Annals of Eugenics*, Vol. 13, pp. 35–71.

Kluckhohn, Clyde, and Murray, Henry A., with the collaboration of David M. Schneider

1953 *Personality in Nature, Society, and Culture*. 2nd ed. New York: Alfred A. Knopf. 701 pp.

LaBarre, Weston

1954 *The Human Animal*. Chicago: The University of Chicago Press. 372 pp.

Lawler, Sylvia D. and Sandler, M.

1954 "Data on linkage in man: elliptocytosis and blood groups. IV. Families 5, 6 and 7," *Annals of Eugenics*, Vol. 18, pp. 328–334.

Mead, Margaret

1954 "The Swaddling Hypothesis: Its Reception," *American Anthropologist*, Vol. 56, No. 3, pp. 395–409.

Mohr, Jan

1951 "Estimation of the linkage between the Lutheran and the Lewis blood groups," *Acta Pathologica et Microbiologica Scandinavica*, Vol. 29, pp. 339–344.

Newman, Horatio H.; Freeman, Frank N.; and Holzinger, Karl J.

1937 *Twins: A Study in Heredity and Environment*. Chicago: University of Chicago Press. 369 pp.

Newman, Marshall T.

1953 "The Application of Ecological Rules to the Racial Anthropology of the Aboriginal New World," *American Anthropologist*, Vol. 55, No. 3, pp. 311–327.

Pike, L. A. and Dickins, A. M.

1954 "ABO blood groups and toxaemia of pregnancy," *British Medical Journal*, No. 4883, August 7, pp. 321–323.

Scott, J. P.

1953 "New directions in the genetic study of personality and intelligence," *Eugenical News, Quarterly*, Vol. XXXVIII, No. 4, pp. 97–101.

STERN, C.
1949 *Principles of Human Genetics.* San Francisco: W. H. Freeman & Co. 617 pp.
ROBERTS, D. F.
1952 "Basal metabolism, race and climate," *Man,* Vol. 52, No. 251, pp. 169–170.
1953a "Basal metabolism, race and climate," *Journal of the Royal Anthropological Institute of Great Britain and Ireland,* Vol. LXXXII, pp. 169–183.
1953b "Body weight, race and climate," *American Journal of Physical Anthropology,* Vol. 11, pp. 533–558.
SUTTON, H. ELDON and VANDENBERG, STEVEN G.
1953 "Studies on the variability of human urinary excretion patterns," *Human Biology,* Vol. 25, pp. 318–332.
TODD, T. WINGATE; BEECHER, HARRY; WILLIAMS, GUY H.; and TODD, ARTHUR
1940 "The weight and growth of the human eyeball," *Human Biology,* Vol. 12, pp. 1–20.
VERNON, PHILIP E.
1950 *The Structure of Human Abilities.* New York: John Wiley & Sons. 160 pp.
WILLIAMS, ROGER J.
1953 *Free and Unequal: The Biological Basis of Individual Liberty.* Austin: Texas University Press. 177 pp.
WRIGHT, SEWALL
1931 "Statistical methods in biology," *American Statistical Journal, Supplement,* Vol. 26, pp. 155–163.

Function

RAYMOND FIRTH

Professor of Anthropology in the University of London, Dr. Firth is a member of the Department of Anthropology of the London School of Economics and Political Science. He is a Fellow of the British Academy and was President (1953–1955) of the Royal Anthropological Institute of Great Britain and Ireland. His principal publications include: We, the Tikopia: A Sociological Study of Kinship in Primitive Polynesia, 1936; Malay Fishermen: Their Peasant Economy, 1946; and Elements of Social Organization, 1951.

IN any discussion of *function* in the anthropology of 1952–1954 the two most pertinent questions are: What is the theoretical status of the concept? And what substantial contributions have been made through its use? A qualification must be made here immediately, especially when one is discussing anthropological work of recent date; one must envisage the possibility that many of the contributions made through use of the *concept* of function may not use the *term*. It is already more than a quarter of a century since, initially through the stress laid upon it by B. Malinowski, the notion of function explicitly has been part of the intellectual framework of anthropological inquiry. There has been ample time for the notion to have passed through phases of enthusiastic acceptance and regular use to scrutiny and challenge, and on to synthesis and absorption. It can be fairly claimed, we think, that in many modern anthropological studies the notions of functional analysis are inherent though the term may never appear. This will be dealt with later. For the present we speak specifically about the concept of function as implied in the use of the term.

But first to make one point. Recognition of the concept of function as a theoretical tool, and hence of "functionalism" as a brand of anthropology, very generally has been regarded as a British attribute. It may come as a surprise then to realize how little attention apparently is paid now by British social anthropologists to methodological consideration of function as a notion, and often how little is their use of the term.[1] The reasons for this are complex and some are mentioned later, but the most important undoubtedly is that "functional" concepts have penetrated so deeply into British thinking about anthropological problems that they have been incorporated often without specific reference. But what is now almost a commonplace to all anthropologists is still relatively new to the sociologists. The attention they have paid to the subject in recent years is one of the reasons why so much space later is devoted to their analyses.

GENERAL SENSE OF THE TERM

The use of the term "function" is very varied. For anthropological purposes we can discard its two lay senses. One is the popular usage of "function" as a formal, social gathering; an occasion of activity and display of a set kind. This quasi-ceremonial usage, though superficially most close to the interests of anthropologists, has been ignored by them because of its lack of precision and theoretical sophistication. Another usage of "function" as equivalent simply to "activity" deliberately has not been adopted by anthropologists, though they occasionally slip into it—as in such expressions as, a certain office-holder "no longer functions." But in such usage there is an element of obscurity. It is not clear how far there is implied in the concept of function as simple activity an attribution of purpose or end to which it is directed—how far, in terms of the dictionary definition, the activity is regarded as being "proper" to the thing.

---

[1] E.g., the eight essays by various authors in *The Institutions of Primitive Society*, edited by E. E. Evans-Pritchard (1954).

This begins to touch on our difficulties. For the term "function" in anthropology, as more broadly in the sciences as a whole, has had two main senses or groups of meanings. One is the relation of interdependence. This is allied to the mathematical concept of function—as a variable quantity in relation to others in terms of which it may be expressed or on which its value depends. In this sense, of a relation which is reciprocal and reversible in terms of cause-effect, function is akin, in the social sciences at least, to covariation (Nadel, 1951, pp. 101, 287, 368–371). But this notion of function as mere interdependence, as non-randomness, does not carry us very far. In the history of social anthropology in particular, the concept of function has not simply been used to chart inter-relationships. It has been linked fairly consistently with the problem of assignment of meaning, in the wide sense.[2] We do not overlook Linton's distinction between form and meaning as passive qualities, and use and function as dynamic qualities, with emphasis on meaning as the subjective associations held by society and on function as satisfaction of need. Nor do we disregard the efforts of Chapple and Coon, and of Homans, to study functional dependence in terms of variation of human interaction over time, and to extract meaning from the degree of interaction in itself. But as Linton pointed out that the four concepts he examined are mutually related, so also Chapple and Coon went beyond the notion of mere covariance, by recognizing that variations can be of more or less significance, by selecting some phenomena as more important for study than others, and by relating their findings to such central themes as the strengthening of individual and social equilibrium.[3]

The second sense of the term "function" in anthropology, then, has had an orientation toward given ends. For Malinowski, as for many later writers, these ends were duplex, one component being the needs of individuals, the other the needs of society and culture. One of his typical formulations (Malinowski, 1931, pp. 638, 639) is, "a functional explanation of magic may be stated in terms of individual psychology and of the cultural and social value of magic," or, more positively, "magic serves not only as an integrative force to the individual but also as an organizing force to the society." Though he said that the real importance of "the so-called functional method in modern anthropology" consists in the parallel study of mutually dependent phenomena or aspects of tribal life, he was never content with this alone but consistently went on to analyze the functional character of kinship usages, of magic, of myth, of religion, etc., in terms of "the deep although derived needs of the individual and of the community." For the community, the cultural need was "the body of conditions which must be fulfilled if the community is to survive and its culture to continue" (Malinowski, 1931, p. 629; 1936, p. 44). This well-known implication of need-fulfilment in the concept of function has involved reference to notions of society as a totality, having a certain unity and integrative character, the elucidation of which has persisted into contemporary discussion.

---

[2] Firth, Raymond, 1951, pp. 33–35. In economics, terms such as "supply function" and "demand function" connote essentially variable elements, their kinship with mathematical usage being shown by the ease with which they are expressed in symbolic form in equations. But expressions such as "the functions of money" imply that there are activities normally expected of a monetary medium, with corresponding requirements to be fulfilled in an economic system; and discussions about the meaning of the word "money" usually involve examination of it in such terms. As regards problems of meaning in the technical sense, it is obvious that symbolic logic and linguistics deal with many aspects not immediately related to functional considerations. But use of the term "function" by linguists implies significant activity, not mere relationship. (See, e.g., Jakobson, R., 1953, pp. 13–14.)

[3] Linton, 1936, pp. 402–419; Chapple and Coon, 1942, pp. 36–42 *et passim;* Homans, 1950, pp. 110–113 *et passim.*

RECENT ANTHROPOLOGICAL HISTORY OF THE CONCEPT

But to appreciate the significance of the use of the concept of function and of functional analysis in anthropology in 1952–1954, it is necessary to review the history of the concept. From the time when Malinowski (1926, 1927, 1931, 1932, 1944) in his articles on social anthropology and on culture in the encyclopedias and elsewhere began to put forward the claim of functional anthropology to constitute a specific and necessary method, the literature on the subject has been considerable and at times confusing. But for social anthropologists in particular a significant milestone was the paper by A. R. Radcliffe-Brown "On the Concept of Function in Social Science" (originally published in 1935 and reissued in 1952 with only two small verbal additions). Radcliffe-Brown was concerned to give a clear statement of the concept of function, having been stimulated thereto by earlier and, as he thought, inadequate views. From his presentation a number of points stand out. He regards functioning as the result of *activity*—it is process. The concept of function involves that of *structure*, and functioning tends to the preservation of the structure—it assists its *continuity*. This implies the notion of *functional unity*. Such a notion of functional unity is an hypothesis that can be *tested*. There may be degrees of *efficiency* in organic functioning, but since we cannot define dysnomia, social ill-health, by simple analogy in terms of disturbance of the usual activities of a social type, we look to conditions of functional disunity or inconsistency for criteria. To establish the degree of functional unity or disunity of a society it may be possible ultimately to establish a *purely objective* criterion. He suggested that the acceptance of "the functional hypothesis" was of advantage to anthropologists since it resulted in the recognition of a great number of problems, some of a comparative order (in which he himself was especially interested) and others of an intensive mono-societal order.

In this essay Radcliffe-Brown made three points of general significance which were a distinct advance in "functional" thinking. The most important of course was his insistence on structure as the correlate of function. On the structural side, Malinowski's concept of functional analysis had always been weak.[4] His concept of function as complete contextualization, as inclusive of all relations of interdependence made insufficient allowance for degrees of effect. He attempted to remedy this by his "need" theory. But he thereby omitted to make clear enough the vital link between sociocultural activity and basic structural principle. In his reaction against the aridities of purely formal comparison he tended to regard form as determined by function to an extent which blinded him at times to the allowance that had to be made for the rigidities of social pattern. Yet in their fundamental thinking, there is not perhaps so much difference between Malinowski and Radcliffe-Brown as often has been supposed. Malinowski's notion of instrumental imperatives of culture includes elements of pattern organization in quasi-structural terms. And his affirmation (Malinowski, 1931, p. 624) that the fundamental institutions of human culture have changed by way of increasing differentiation of form in accordance with an increasingly definite function has much in common with Radcliffe-Brown's more cautious view (1952a, p. 183) that change of social type is dependent on function, i.e., on the laws of social physiology, as exemplified in European institutions during the last twenty-five centuries.

The second point to be noted here is the attention Radcliffe-Brown draws to dysnomia in terms of functional inconsistency and disunity. This is a point referred to later by Bateson (1936, p. 31), in his useful critique, in terms of the mutually antagonistic effects of certain functional relationships, leading to a reduction in solidarity, a relaxation of obligations, etc. It is also taken up by Merton (1949, p. 37) in broader terms—of the dysfunctional consequences of some social forms, and the ultimate problem of developing an organon for assessing the net balance of consequences if social research is to bear on social technology.

---

[4] Lévi-Strauss (Kroeber and others, 1953, pp. 532–533) has pointed out that a functionalist may be far from a structuralist—his example being Malinowski.

The third point here is Radcliffe-Brown's specific stress on *social* function in terms of correspondence to group requirements. It is incorrect to say, as one sometimes hears it said, that Malinowski related function to individual needs and Radcliffe-Brown related it to social needs. Malinowski, as observed already, was concerned with group reinforcement, while Radcliffe-Brown admitted that an essential part of the "functionalist" task is the investigation of the individual and of the way in which he is moulded by, or adjusted to, the social life. But whereas for Malinowski the group tended to be a cultural universal, for Radcliffe-Brown it has been for the most part an identifiable, though abstract, type of social unit with time-place coordinates in a particular cultural system.

In some other respects Radcliffe-Brown's treatment was less satisfactory, leaving residual problems of a refractory kind, from the influence of which anthropology only now is working free. One of these, in some ways more a verbal than a substantial difficulty, lies in the definition of function. Radcliffe-Brown does not take up Malinowski's definition in terms of derived needs of individual and community. In fact, he does not refer in the essay to Malinowski at all. He goes back to Durkheim, but substitutes for the French equivalent of the term "needs" that of "necessary conditions of existence." He does this, he says specifically, to avoid the possibility of a teleological interpretation. "Function" then becomes the "contribution" which a partial activity makes to the total activity of which it is a part. Malinowski later characterized this as a "glib expression" and demanded more definite and concrete reference to what actually occurs and what can be observed. The definition, curiously enough, is reminiscent of some phrasing of Malinowski's own, years before (1927, p. 111): "Above all, we want to know how the various aspects of culture influence one another, and in what measure they contribute to the integral working of the cultural scheme. It is clear that such functional Anthropology would be capable of supplying us with criteria of cultural efficiency." More recently, Radcliffe-Brown (1952a, p. 200; 1952b, pp. v, vi) has defined social function in terms of the relation of a socially standardized mode of activity or mode of thought, to the social structure to the existence and continuity of which it makes some contribution. But as Nadel (1951, p. 371) has pointed out, the correlation between functional activity and social existence implies objective or absolute utility for the observer, and "smooth cooperation" as an end. And as Talcott Parsons (1954, p. 217) has indicated, any such conception of function which is oriented toward the maintenance of social existence does involve a teleological element.

A second difficulty in Radcliffe-Brown's treatment has been the notion of the functional unity of a social system. This is in some ways a peculiar concept. From one angle it appears as a more sophisticated version of the group referent of Durkheim, an abstract, neutral principle whereby individual behavior could be treated selectively and given coherent explanation in terms of major theory. But from another angle it is a much more substantial concept, associated with notions of social equilibrium, and of opposition (that is, socially regulated and organized antagonism) as an essential feature of every social system. Here one is tempted to look beyond the scientific environment of the social analyst into a field of his social interests and personal temperament, possibly with a strong aesthetic component, in which a conviction of the importance of *order* is a general and not merely a sociological regulating principle. Be that as it may, and even though Radcliffe-Brown has spoken of this concept of functional unity and integration as only an hypothesis, its currency in practice has tended to give to some interpretations of social phenomena a bland and facile air.

It is in reference to this point, in particular, that we may consider some sociological views on function.

GENERAL SOCIOLOGICAL CONTRIBUTIONS

Sociologists such as Max Weber (1947, pp. 15–20) and Karl Mannheim (1940, pp. 240–243) have examined concepts of functional interpretation long ago. But it is comparatively recently that they have done so with specific reference to the theoretical treatment of the same theme by anthropologists. Here, as in so many other conceptual inquiries, the way has been led by Talcott Parsons.

In his earlier work Parsons (1949b, pp. 436, 437, 438, 713) was content to use the terminology of functional explanation without subjecting it to special scrutiny. But as his interest developed it began to play more part in his work, until we get the "structural-functional analysis" of himself and those who have benefited most from his massive frame of reference. As he points out, once use is made of the notion of the structure of a system as a positive constituent of dynamic analysis, there must be some way of linking these "static" structural categories and the factual statements associated with them to the dynamic variable elements in the system. This link is supplied by the "all-important concept of function." It is very clear that the synthetic and dispassionate approach of Parsons to the notion of function, the problems it presents, and the use to be made of it have continued to be of great importance, especially in their more recent formulations. Parsons regards the concept of function as a valuable tool. He speaks of it as a principle relating action to object. He points out that it is always relative to a given basis of reference. "The functional problem of social systems," he says (1951, p. 25), "may be summarized as the problem of location and integration." Such problems are set by the nature of the human organism itself and by the pressures of scarcity and time, opportunity and resources in the situation. These constitute the conditions and, as Parsons puts it, "the empirical necessary preconditions of social systems in operation." These, in general terms, are what Parsons refers to as functional imperatives, a term which seems to be broadly equivalent to requirements for action. Such functional imperatives are unevenly distributed within the given social system; as, for example, those in the kinship cluster contrasted with those in the economic cluster. But while a set of functional imperatives is imposed by the nature of human action in society, it is also necessary for the process of selection to take place between ends and between means for the realization of ends in accordance with standards of evaluation. Such evaluation "of all the strategically significant categories of the object world," is itself a functional imperative of a system of moral standards. Yet systems of action are functional systems while cultural systems are symbolic systems in which the components have logical or meaningful rather than functional relationships with one another. Hence the imperatives which are characteristic of the two classes of system are different (Parsons, 1951, pp. 173, 177, 241). In this treatment, to which it is almost impossible to do justice in compressed version, Parsons seems partly to be bringing in Merton's difference between manifest and latent functions and partly restating in more formal language the difference which Malinowski envisaged between basic needs and derived needs, or, as he called the latter, cultural imperatives.[5] Linked with this conception of the symbolic autonomy of the cultural or social system is the difference between the needs of the system and those of the individual participants or actors who operate it. Parsons points out the dangers in the use of functional analysis which may involve either a metaphysical teleology or hidden political and ethical preference. To avoid this, he holds that it should be sufficient to bear constantly in mind that the concept of "systemic needs" is a kind of shorthand for motivational processes.

---

[5] In Malinowski's view (1944, p. 121), responses to these cultural imperatives are as vital as to the basic human needs; failure in social cooperation or symbolic accuracy means immediate or long run failure to survive.

The contribution of Talcott Parsons to functional theory has been architectonic in the style of its thought, scholarly in its impartiality among theories. Its elaborateness and the closeness of its relation with other aspects of his theory sometimes makes it difficult to use alone. But part of his contribution has been to use the concept of function with more flexibility and more richness of content than the anthropologists have done; to relate it more positively to structural concepts, in more meaningful ways; and, supported by sociological colleagues, to face the difficulties inherent in its implications and try to remedy them.

These difficulties, associated especially with the vagueness and lack of precision of the concept of function, even when specifically defined, were faced most directly by Robert Merton (1949, pp. 21–81). In what he described as an attempt to lay out the foundations and framework of "the kind of social theory called functional analysis," he set out to modify the assumptions, concepts, and procedures, both implicit and explicit, in the functional interpretations of sociologists, psychologists, and social anthropologists. But in bringing the functional notions of anthropologists more directly into sociological perspective, Merton did not spare his criticism. The anthropologists, myopic from their intensive studies of small-scale societies, had developed the notion of functional unity to a point to which it seriously threatened social theory. Not only was the idea of functional unity "manifestly contrary to facts" but it was also "of little heuristic value." Merton pointed out that in transferring the concept from the small scale to the large scale, from the simpler societies of the primitive field to the complex, highly differentiated societies of the West, the social theorist has paid an excessive intellectual penalty, which he exemplified by reference to the functional analysis of religion. In this we would agree with Merton's basic viewpoint. Indeed we have pointed out "The hypothesis that religion is an integrating force is more closely applicable to the simpler than to the more highly complex societies. With social and economic differentiation religion often becomes a banner for sectionalism" (Firth, 1948, p. 41). But one may confuse here *theory* and *field*. For religion a concept of functional unity fairly may be said to have had its main genesis in the field of the more primitive societies—as in the Australian material analyzed by Durkheim. His examination implicitly stresses the functional integration of society in representing society's interior life as the total, outside which nothing exists, the source of such basic categories as space, time, and causal relation. "The rhythm of the collective life demonstrates and embraces the varied rhythms of all the elementary lives from which it results" . . . (Durkheim, 1915, p. 439 *et passim*). Moreover, Durkheim emphasizes that his study has a comparative and general application. However, Durkheim was not an anthropologist but a sociologist, and the essence of the notion of functional unity is in line with, if it does not stem from, his conception of "organic solidarity" based on the division of labor and from allied notions. Members of such a society are united by bonds which extend far beyond the brief moments when exchange takes place: "Chacune des fonctions qu'ils exercent est, d'une manière constante, dépendante des autres et forme avec elle un system solidaire" (Durkheim, 1932, p. 207). This is a conception which, if it did not precede his analysis of material from the non-literate societies, owed almost nothing to them.

Again there is the question of the postulate of the unity of the total society. Merton asserts that this is "a question of fact, and not a matter of opinion," and cannot be usefully posited in advanced of observation. Such a challenge to further inquiry is valuable. Yet surely the perception of such unity is a matter of abstraction? The postulate need not be there as a hard assumption, but it must be there as hypothesis before observation can confirm or deny it. Moreover, observation alone cannot correlate the behavior of individuals in diverse situations of place and time and establish as "fact" the *condition* of a "total society." If *"integration"* is a plainly formal concept, as Merton holds (1949, pp. 32, 46), then should not *"unity"* be put into the same category?

What Merton has done is important. He challenged in a very useful, if at times selective, way the notions of functional unity, of functional universality, and of the indispensable character of social or cultural items. He set out the logic of procedure in functional analysis: the establishment of some functional requirements, for operation or survival of a social system; the relation of these functional requirements to a particular kind of structure; a concrete description of structures and processes through which these requirements are met in normal cases; search for equivalent or compensating mechanisms, if some of the typical ones are inadequate or interfered with. His elaboration of these rules in his "paradigm" drew attention to significant questions and made several valuable and necessary distinctions. Of these, the most striking, as for him the most memorable, is the distinction between manifest and latent functions, which has now passed into current anthropological thought in various forms.

Further points of criticism of functional concepts have been developed by George C. Homans (1950, pp. 268-272). Acknowledging that the theories of "functionalism" were first developed in anthropology and that they have made a contribution to social science, Homans acknowledges also the reciprocal debt to Durkheim and Talcott Parsons. Yet, like Merton, he has seen difficulties in the use of the concept of function. One is the lack of clarity as to what is meant by the unit entities or elements which have been isolated for discussion and seen as related to one another in the social structure. Homans does not refer specifically to the unclassified use of unit entities of a wide range of magnitude. But he does draw attention to the ambiguity when *institutions* are so cited and it is not indicated whether the institution is a general department or aspect of human activity, such as religion, or a specific organization or body such as a church. He overhauls also the notion of continuity or survival as a reference point. In view of the fact that since society has nearly always managed to survive somehow or other, he argues that it is not easy to see just what is the contribution of any socio-cultural item to this. Here he is catching up a point made in other words by Radcliffe-Brown (1952a, p. 183). In pointing out also that because a recurrent activity is inter-related with others it does not therefore necessarily contribute to social continuity, he stresses again, as Merton has done, that such broad assumptions properly should be used as hypotheses, not axioms. To try to avoid such difficulties, Homans has given his own reclassification of the elements of social behavior.

We may now consider a very recent systematic treatment in which the concept of function occupies a central place. The pervasive character of modern social theory makes it difficult to attribute "influences" or "priorities" to phases of ideas. It is hard for the observer to see then just where the critical examination of the notion of function and the positive suggestions about it have contributed to the most recent formulations. But the synoptic treatment of Marion J. Levy (1952, pp. 27–110) is frank as to its sources, owing a primary inspiration to Talcott Parsons but drawing upon almost the whole range of the social sciences for consolidation of the theory. Anthropology of 1952–1954 is set firmly, as far as its general social theory is concerned, in a sociological matrix.

Levy aptly remarks that structural-functional analysis is not something new in either the social or the natural sciences; the only new aspect of it is its formidable name.[6] In his earlier attempt to define the concept of function, Radcliffe-Brown had associated it with the notion of structure. Functioning, he argued, tends to preserve structure, to assist its continuity. Moreover, he stated, one can observe structure only through its functioning. But in such recent work as by Levy, structural theory has become clipped to functional theory to a degree which Radcliffe-Brown himself apparently had not envisaged. In fact, the position seems to have become reversed from Radcliffe-Brown's formulation—though not from his actual analyses, in which structural considerations have been primary. Levy separates the concept of function from that of the functional requisites of a society. Function is regarded as the consequences of structure, as a condition or state of affairs resultant from the operation of a structure through time. Even mere persistence of a structure has as its resultants certain functions.

---

[6] Our resolution is still further tested a little later when we are told that the primary orientation of his book is to "structural-functional requisite" analysis and that distinctions must be drawn between eufunction and dysfunction, eustructure and dysstructure.

Here one is getting to the border-line of personal arrangements of the counters of intellectual play. For one may argue that one cannot know a structure apart from its operations, and that the distinction between structure and function is so much verbal expertise. I think this would be a harsh judgment. Granted that, as Parsons has hinted, structure and function are relative terms, and that the concept of "structural-functional" has come into being as a unitary term to express this empirically indivisible relativity. Granted also that there is a danger of a mere load of words in itself obscuring thought, however refined the analysis may be. Yet such analysis and synthesis of concepts of a functional order have been stimulated by real obscurities in the literature, and have resulted in significant distinctions being drawn. To many, the newer terminology may not be acceptable. As Merton (1949, p. 54) has said, "taxonomies of concepts may be multiplied endlessly without materially advancing the tasks of sociological analysis." But if the analysis be regarded as a framework of ideas rather than as a framework of terms, there is much that can be gained.

If now we try to see briefly the connotation of function by sociologists and anthropologists as of 1952, we see at least four distinct usages: (1) function as the *activity* of object or entity; (2) function as *relation of interdependence* with activities of other objects or entities—the contextual identification; (3) function as relation of interdependence *of special quality*, e.g., in regard to requirements or ends such as maintenance of a social system, this quality being positive or negative in character; and (4) function as *consequence of structure*. Contrary to Levy's view, we doubt if this can be treated as the most general sense of function, unless it be argued that every object or entity connotes a structure. But this raises problems, on the one hand, of the consequences of the activity of amorphous entities, and, on the other, of the heuristic value of giving more limited usage to "structure" for social analysis.

A note may be made, in passing, to questions of recognition of kinds of functions. One such question relates to the distinction between manifest and latent functions. Such a distinction already was implied in Sapir's usage of "explicit and tacit requirements" satisfied by a language system.[7] Merton's specific recognition of this distinction stimulated discussion and gave a very useful refinement of terminology, but it left untouched one fairly obvious difficulty. For his definition, Merton drew attention to the difference between the intended consequences of action and the unintended consequences, and he allied these with the recognition or non-recognition of them. The former were manifest functions, the latter latent functions. Levy, while adopting the definition, has pointed out the fairly obvious corollary that in any system what is manifest to one person may not be to another. Hence not only the action and its results must be specified, and the system in which it is involved, but also the actor or actors from whose standpoint it is being viewed. Incidentally, Levy also points out that Merton's treatment of dysfunction takes account only of latent forms.

Another point, which is related to this, but which does not seem to have received full treatment, though it is referred to in Levy's systematic appraisal and by Merton, is the difficulty from the observer's point of view of assessing functions in empirical situations. Much depends upon his view of the overall character of social relationships, and on the theory which he thinks applicable. For example, one can discuss the "protest functions" and "pressure functions" of trade unions as introvert functions, serving their own ends and maintaining their internal solidarity. One can see these as dysfunctional from the point of view of society as a whole, linked with various restrictive and disturbing practices. On the other hand, one can regard them as part of the general process whereby groups necessarily express themselves and work in society, giving confidence and energy to their members and gain to the society which relies on their efforts. In this sense they may be regarded as having positive extrovert functions, manifest if they see their group solidarity contributing to social strength as a whole, but latent if they do not see this. Too much recent treatment of function still adopts an exclusive attitude, seeing behavior pattern either in completely positive or completely negative terms, in relation to the social system.

---

[7] He was talking of the possibilities of an international auxiliary language, and thought that much of the difficulty in its adoption lay in lack of clarity as to its "fundamental functions" (Mandelbaum, 1949, p. 110).

Before concluding this brief account of the work of the sociologists, a reference may be made to the inquiry into the notion of function, and use of the concept, by a philosopher, A. Macbeath (1952, pp. 121, 129, 138–139, 142–143). He uses the term "function," in the first place, as equivalent to interdependence. It is this interdependence of its institutions, whereby they mutually support one another, to which functionalist anthropologists refer when they speak of the pattern of the culture of a particular people. He points out that this does not mean that the institutions are logically connected or rationally coherent, but only that they are so connected for the people concerned that the satisfaction provided by one act has incentives to perform the duties required by another. Constancy again means only lack of complexity. On the other hand, he uses the term "function" also in reference to ends. He speaks of the important functions which the arrangement of economic support by brother to sisters fulfils in the life of the Trobrianders: "It not only provides for the satisfaction of economic and other needs but it helps to give greater stability to marriage, and it provides a mechanism whereby the chief collects tribute and his justification for exacting it." He refers also to Malinowski's account of the principle of reciprocity, saying that it may be seen from three points of view, that it performs three *functions* in the life of the Trobrianders, and that its *requirements* may be complied with from three different sorts of motives (italics ours). These three points of view are the recognition of the system as moral, right, and obligatory; the expression of the principle in systems of exchanges which it is to the individual's own interest to keep up; and recognition that, if the requirements of the system are not complete, unpleasant consequences are likely to follow. These consequences, according to Malinowski, are essentially of the *nature* of, or perform the same *function* as, legal sanctions in more advanced societies. Macbeath, then, tends to equate the concept of function with fulfilment of requirements and to find in the fulfilment of requirements the essential nature of the principle or institution concerned. This virtual equation of character and function reminds us of the layman's view as expressed in the dictionary definition of function as activity *proper* to an entity. But Macbeath is not concerned to examine the concept of function itself; he uses it simply to advance his examination of Malinowski's material.

GENERAL TREATMENT OF FUNCTIONAL CONCEPTS IN RECENT ANTHROPOLOGY

It is from this general sociological base that we can pursue our inquiry into the work relating to function done specifically in anthropology between 1952 and 1954.

In considering the theoretical status of the concept of function, it is significant to note that interest in the theoretical exploration of the concept as a topic seems for the time being to have died down. One would not have expected such a full scale analysis as Kroeber and Kluckhohn devoted to *culture* in their critical review of its concept and definitions. But if we consider only the close relation in the work of Malinowski between his concept of culture and his theory of function, it is somewhat surprising to find in the Kroeber and Kluckhohn review almost no consideration of the concept of function itself. Indeed it enters into the field of conceptual elements recognized in definitions of culture only indirectly under the head of "dynamic structural relations." Only three of the formal statements on culture cited in the section on definitions introduce the term "function," those by Bidney, Gillin, and Turney-High (Kroeber and Kluckhohn, 1952, pp. 44, 61). Other statements as by Radcliffe-Brown, Wallis, Forde, also defining culture in functional terms, or discussing function in relation to culture, are cited in other contexts (pp. 84, 85), but the functional concept itself is not specifically examined.[8] Essentially the reason for this omission would seem to be the tacit acceptance of "function" as a term of general usage rather than one which should bear theoretical weight as a critical concept.

To some extent, this position would also seem to lie behind the relatively small attention paid to the concept by Bidney. Seeing that in carefully choosing as a title for his collection of essays the name *Theoretical Anthropology* he intended a study of postulates and assumptions underlying the development of modern cultural anthropology, one might have thought a philosopher would have found essential a full scale essay treatment of the theme. What one does find is a section on the concept of functional integration and some discussion of "functionalism" as a movement or trend in anthropological thought, but this is linked closely to the examination of Malinowski's cultural theory and to the more general concepts of cultural integration and of ethno-history. In his discussion Bidney neatly points up the implicit use of the category of function by Boas and his followers in field investigation and the debt which the functional theory in its explicit form in anthropology owes to the naturalistic instrumental approach developed at the time by John Dewey.[9] One wonders, however, whether the use which Boas and his followers made of the functional category was not really very limited and empirical, and a very different thing from the later developments by Malinowski and Radcliffe-Brown. Indeed, Bidney's own frank expression (1953, pp. 217, 224–236, 366, 374) that it remained for these two anthropologists "to make functionalism a fighting term" suggests this.

Malinowski and Radcliffe-Brown in the twenties and thirties did not merely say that items of culture were interrelated. They had to show by the analysis of concrete examples that much more positive results could be achieved by studies which bore a specifically "functional" label than by the methods of simple collection and analysis of ethnographic facts under the conventional heads or compartments of the day. In particular, though their rejection of conjectural history was too forceful and too negative for acceptance in toto, their insistence on the understanding of cultural elements and processes in terms of the set of contemporary phenomena, and on the integrative character of society and of culture, resulted in the discovery of many relationships hitherto unperceived. This great service could not be overlooked even at the height of the controversies which its expressions evoked. But these controversies have had their effect in one way by inducing a certain lassitude—at least among British anthropologists—at the thought of now undertaking further full-front examination of the concept of function. Linked with this also has been the growing realization that the concept of function, as Malinowski used it and also as redefined by Radcliffe-Brown, has always been better as an heuristic instrument than as a classifying instrument. Moreover, in British anthropology a competitor for conceptual attention soon appeared in the field. Interest in structural concepts and recognition that earlier functional analysis needed, as it were, a formal stiffening by such concepts, turned attention away from explicit considerations of function. Furthermore, as the range of easily recognizable relationships between contemporary phenomena in culture became explored fairly widely, though not yet systematically, there was less reason to focus attention upon functional concepts *per se*.

---

[8] It is interesting to see that the authors state that Part 3 of their treatise will "serve the function" of a thesaurus of representative or significant statements on cultural theory.

[9] He might also, as Kluckhohn did earlier, have pointed to the more general climate of intellectual opinion, from biology to architecture, at the time.

But a further reason is that so much of "functional thinking" has passed into general currency unnoticed or at least unnamed. There is no need to repeat Malinowski's embarrassing technique of claiming as "functionalist" all those of whose work he approved. But it can in a very real sense be said that all British social anthropology today is functionalist. This is brought out very clearly by Fortes (1953, pp. 16, 18–27) in his inaugural lecture when he calmly assumes that functional anthropology is "the generally accepted basis of theory and research in Britsh social anthropology." In this he has picked up the affirmation of Evans-Pritchard who, despite his disagreement with what he regards as some underlying assumptions of functionalism about the character of social systems, has stated (1951, pp. 58–62) quite categorically that he looks upon himself as a functionalist and a follower in the footsteps of Malinowski and Radcliffe-Brown. It is true that Fortes has claimed that the chief innovation for which the functionalist movement stands was a contribution of the Cambridge School of Anthropology—the principle of the intensive study of limited areas. It might be argued that this was a procedure rather than a principle, and that the innovation of Haddon and his colleagues was not so much in studying a limited area as in going to the field to collect data themselves rather than let it be accumulated for them. And here Franz Boas has at least equal credit, since, though he did not go specifically for anthropological work to the Central Eskimo in 1883 and 1884, he was the first to make an intensive area study of a modern ethnographic type (Herskovits, 1953, pp. 66–68). Indeed, as Fortes admits, it is the body of theory that grew up with intensive field work as its concomitant that gives functional social anthropology its basis of discipline. Yet on one point there may be ground for question. Fortes (1953, p. 28) has stated "the functionalist point of view has always been precise and consistent." This surprising statement cannot be meant literally. By it he apparently means that this view had as its goal the search for general laws or tendencies of human social life, "regularities independent of period or place in social organization and culture." This means revealing the functions of institutions in relation to the whole social system. It is only in characterizing the functionalist point of view in these broadest terms that the labels of precision and constancy have any chance of being accepted.

But another reason for the virtual absorption of functionalist ideas into the body of modern social anthropology without further exploration of meanings is probably the feeling that this exploration has, for the time being, gone far enough. To the penetrating analyses of Parsons and Merton have been added the reformulations of Nadel (1951, pp. 368–371) and of Marion Levy, and such useful reviews as those of Eggan (1954, pp. 746–747, 753–755). With all this at his back, the contemporary social anthropologist has been able to go onward to substantial, and not merely to formal, inquiry.

When we turn to the contexts in which the term function is actually used, however, we still find different emphases, and by no means clear-cut agreement on what they represent. Even the classic Wenner-Gren Foundation 1952 International Symposium which resulted in *Anthropology Today* illustrates this. Redfield's description of "the functional model" as one in which a culture or society is seen as an organization of means designed to achieve certain ends, is a fair thumbnail sketch which frankly recognizes a teleological emphasis. Bidney's reference to functionalism in the context of value analysis is in the same general strain, with survival of individual or society picked out as the major value criterion. Contrasting to some extent with this is Willey's craftsman's emphasis on functional interpretations in archeology as designed to elucidate uses of artifacts and their relations to socio-political and other nonmaterial features. He gives an interesting demonstration of the kind of hypotheses that can be formulated by such means, while he also is careful to point out their limitations, and the speculation that lies beyond. Beals and others, admittedly with different themes in mind, are concerned with the lacunae in "historical" appreciation by functionalist-trained scholars (Kroeber and others, 1953, pp. 380–383, 631–634, 694–696, 734). Another example, superficially in line with the last, but actually of a very different cast of thought, is given in Dittmer's more recent discussion of ethnological methods. He uses the term *Funktion* in discussing social functions, cultic functions, etc., in an ordinary sense of correspondence to requirements. But he dismisses the "functionalist method" in brief space on the grounds that it can contribute little to "historical" inquiry, which he regards as the essential task (Dittmer, 1954, pp. 9–10, 15, 53, 58, 95).

But we need glance only briefly at the use of the term "functionalist" as a label for a set or category of anthropological studies, for the totality of a method, or for a school of people using such a method. It helps to complete the picture to see such views as that functionalism was the major reaction in Britain to the study of memory cultures; that functionalism has been "a prevailingly fashionable subject"; that Malinowski was a "classical functionalist." It is interesting too to have Murdock's statements that he has supported functionalist anthropology at one time and traditionalist anthropology at another; or that he becomes more historical as the functionalist position gets more adherents. And one can reflect on Linton's saying that even the functionalists appreciate that frequently in cultural phenomena what you have is not function (Tax *et al.*, 1953, pp. 348, 354; Kroeber and others, 1953, pp. 395, 622). Such *obiter dicta* throw unexpected, often welcome, sidelights on men and opinions. But they do not let us know clearly what is a "functionalist," and they may have overtones that are more appropriate to informal than to formal discussion.

Now we consider the use made of the term function, the analysis of a functional kind, and the results, from within the discipline of anthropology in ordinary general work.

It is convenient here to refer initially to statements by Lévi-Strauss, whose integrative approach and acute critical scholarship have had such an important influence on anthropology in recent years. In his published work, Lévi-Strauss seems not to have devoted any particular critical attention to the concept of function. As many others do, he takes it in his stride, using it as a tool where he thinks it appropriate, assuming that it is sufficiently well understood not to necessitate specific definition. For the most part, he is content to utilize such terms as "process," "operations," "relation," and the like, in contexts where the term function might have been used by others. How far this is due to championing of the work of Mauss rather than that of Malinowski, it is hard to say. Certainly he has indicated his clear preference for a use of the term function in a way analogous to the mathematical, as he says Mauss conceived it, rather than in the "naively empirical sense" of a practical service rendered to society, as conceived by Malinowski. This championing of the "example of algebra" still leaves certain questions unanswered. It is true that Malinowski at times was content with too superficial and too temporary relationships labelled as functional. Yet he was searching, in his concept of function as satisfaction of need, for something more permanent and deeper than "practical service," as Lévi-Strauss terms it. Lévi-Strauss says "There, where Mauss envisaged a constant rapport between phenomena, wherein is found their explanation, Malinowski asks himself only, what do they serve in order to seek their justification."[10] But Malinowski was not content

[10] Lévi-Strauss, C., 1950, p. xxxvi; cf. also 1949a, pp. 24, 592, 613, 614; 1949b, pp. 363, 374. Balan-

with mere association. The fact of constant rapport might in itself not be sufficient to provide explanation for associated phenomena. Relation, in itself, does not necessarily touch the problem of meaning. And function, to Malinowski, should not be separated from meaning. Though he did not make much of his debt, it was perhaps most from Durkheim's definition of function in terms of the relation of correspondence between activity and need of the social organism, that Malinowski derived much of his own concept.

More recently, Lévi-Strauss has given a brief formulation which hints at his own conception of function. He points out that social anthropology was born from the discovery that all aspects of social life—economic, technical, political, juridical, aesthetic, religious—constitute a significant whole and that it is impossible to understand any one of these aspects without considering it in the context of the others. Social anthropology, then, tends to operate from the whole to the part or at least to give a logical priority to whole over part. A technique, for example, has not only a utilitarian value but also fulfils a function. For the technique to be understood, this implies social considerations as well as those of mechanics, history, etc. Linked with the assembly of functions are notions of structure and, in another projection, those of culture. This would seem to be in line with Lévi-Strauss's general view (1954, pp. 105-106) of the essential relational character of the concept of function.

Other recent anthropological treatment has been concerned with the use of functional criteria as an aid to the construction of both formal and substantial propositions at least as much as with analysis of the concept itself. E. R. Leach, as part of a valuable modern trend toward model construction and analysis, is interested in the implications of alternative possibilities—in the case under discussion where a matrilateral cross-cousin marriage rule exists in association with local descent groups. By "*implications*" he understands specifically the "function" of rules of behavior in a "mathematical" sense. That is, given such a rule and the existence of various other elements common to two or more societies, can it be inferred by logical arguments that some hitherto unknown characteristic or relation also must be common? From this point of view, though Leach is not at all unmindful of the empirical situation, he is not much concerned with what he says Malinowski might have called the overt function of the operation of the rules. He thinks that, since in different societies one and the same rule may doubtless serve different immediate ends, comparison in terms of such ends can lead only to purely negative results. This would seem to be linked with the distinction he draws between structural explanations, expressed in terms of persisting relations as between local descent groups, and essentially psychological explanations, relating to temporary relationships between individuals (Leach, 1952, pp. 27, 37). There is much in this with which one can agree. And yet the antinomy seems somewhat forced and artificial, if only because persisting relations between groups derive their continuity, in the last resort, only through the meaning which individuals give to what, in Leach's terms, are but temporary relationships. Leach draws the contrast between the hyperbole of functionalism which he says insists on the analysis of whole cultural systems, and a more limited approach to the comparative method. With Lévi-Strauss, he pursues the comparison of models but insists, in particular, that such comparison must always take into account "the whole range of institutional dimensions with which the anthropologist normally has to deal." It must also start from a concrete reality, a local group of people rather than from an abstract reality such as a lineage concept or the notion of a kinship system (Leach, 1952, p. 53). Such an analysis, when stripped of its polemic, does appear to make effective use of the concept of function by absorbing into the treatment much of the refinement that has been introduced during the last quarter of a century. Methodologically, it

---

dier, G., seems to share this critical estimate of "functionalism" (1954, p. 6).

does seem to leave still undefined the issues involved in incorporating "the whole range of institutional dimensions" into anthropological analysis. Practically, it seems another of those useful fusions of the ideas of Malinowski and Radcliffe-Brown in the crucible of originality, which Homans for one has managed so successfully. But in this immediate context, it has produced a brilliant example of working in model form with the "consequences of structure." It is reminiscent of Redfield's designation of a "functional model strongly associated with conceptions of structure" (Kroeber and others, 1953, p. 734)—though Leach himself would probably describe it in reverse terms.

A range of related intermediate usages of the term function is given in the work of various American authors, e.g., James B. Watson (1952); Sol Tax (1953); S. Leacock (1954); E. H. Spicer (1954). Sol Tax, in a section headed "The Functions of Wealth" in his study of a Guatemalan peasant economy, is concerned with the *associations* of different degrees of wealth with different types of family and different styles of life. Spicer, in discussing functional linkage between aspects of culture, states that he does not mean anything more by this term than the *conjunction* of cultural behaviors. This has nothing to do with similarity of form. An example he gives of one of the closest functional linkages in Yaqui culture is that between the "complex of traits" that makes up the military aspect of the culture and that which makes up the political aspect in respect of village government. By procedures of joint signatures, in the transaction of routine civil business at the military headquarters, the civil government and the military society "function together." Such functional linkage operates further in the ceremonial field and tends to relate closely the behavior patterns of all the different types of organized social units in the community. Such a concept of functional linkage Spicer regards as an integral part of his general analysis of the basic configuration of one of the native cultural systems in Sonora. The concept of configurational analysis is also explicitly brought forward by Watson as a means of identification of factors of cause or effect and of establishing relationships among them. As part of such an analysis, functional considerations are examined. It would seem that such considerations are regarded as being of the order of concrete relationships in a contemporary field, since they are distinguished specifically from logical, historical, and reconstructive considerations which are differentiated as being separate categories. This is a use of the term function which, although in line with ordinary anthropological usage, seems to be more restrictive in its connotation than most. Although it is allowed that the functional consideration is closely akin to the logical in his Cayua analysis, Watson regards the relation between the availability of the machete and its adaption in the increasing scale of agriculture as an example of a causal relationship predicated upon logical grounds. Most "functionalists" would include this under the functional category.

A restriction of rather a different kind is suggested, though not examined, by Leacock in his comparison of the concepts of Mauss and Malinowski. While he emphasizes Mauss's concern with the study of social systems in their entirety, and describes it as a specifically functional approach, he points out that Mauss was not advocating functional studies in Malinowski's sense of the term. While on the one hand, this was because he was not in sympathy with Malinowski's relation of functional concepts to individual human needs, Leacock argues that it was also because Malinowski wanted to restrict functional studies to one society. It is true that Malinowski himself was primarily concerned with such study in field terms, and that temperamentally he was not interested in close institutional comparisons between social systems of similar structure. Nevertheless at no time did he reject such comparisons. What he demanded was that they should be based upon much fuller studies of the integral relationships of the items compared. It should not be forgotten that one of the earliest statements of his functional points of view was this: "The facts of daily life, the emotional side of family relations, the magico-religious ideas of the aborigines about kinship and sexual relations, customary as well as legal norms—all these factors must be taken impartially into careful consideration in order to give the full picture of an institution as it embraces living man in living society. In other words, each social institution must be studied in all its complex functions as well as in its reflection in the collective psychology." Yet this statement is from the foreword (1913, pp. v–vi) of his elaborate *comparative* study of family and kinship among the Australian aborigines.

A critique of functionalism, especially in reference to the work of Malinowski, is also given by C. S. Belshaw (1954, pp. 135, 140–141, 151), but from a special point of view. He sees Malinowski's theory of functional response to basic needs as an ideal construct, and links with it "the false theory of functionalism, that primitive society attains its ends in a manner well suited to it, and therefore efficiently." With these he contrasts the "more pertinent" view of function as interrelation of action, which he finds more adapted to his examination of social change.

INSTITUTIONAL STUDIES

The major part of this essay has been concerned with the theoretical status of the concept of function in anthropology 1952–1954 and the conditions which have been responsible for this. But an examination of the questions of where function stands in anthropology today means also considering what kinds of substantial propositions have been formulated with its aid. One can do no more than refer briefly to these, since in a sense nearly all modern social anthropology would come under this head. But a few examples, rather arbitrarily selected, will illustrate the general position.

First let us consider several contributions by Johansen, Rapoport, Srinivas, and Wilson, from the general field of religion, in which the propositions are not stated in functional terms, or at least in which the term "function" occurs only casually and incidentally. Johansen (1954) is concerned to elucidate, from a combination of linguistic and anthropological points of view, what he terms the non-ritualistic aspects of Maori religion. By this he implies the secular relations which give meaning to the religious ideas and practices of the Maori. His method is not that of the functional anthropologist, with its search for systematic correlates, but he begins his analysis with a study of the kinship structure, and ends it with an interpretation of Maori spirit belief in terms of what he calls "situation," which is broadly equivalent to social context. Johansen is dealing with pre-European Maori culture on a single time plane. The central problem in Rapoport's study, on the other hand, is change in religion and religious values—in this case among the Navaho (1954). His analysis is at a different level of sophistication, with psychological and sociological interpretations fused into the anthropological, and could easily be claimed as essentially of a functional type. In particular, he describes not only the qualities of Navaho society and of the proselytizing missions, and the overt social qualities of Navaho responses; he also brings in postulates of a dynamic order in terms of the personal need-dispositions "functioning in the context of the changing Navaho system" (Rapoport, 1954, p. 5). The results show how conversion to Christianity is not an automatic process but reflects and is a response to socio-cultural disorganization and emotional need of individuals. By contrast, the analysis of Coorg religion by Srinivas (1952) is a study in social solidarity. His detailed study of the patrilineal joint family, strong and sharply structured, is related to an elaborate ritual idiom of complex performances, the major effect of which is in the direction of strengthening this social unit. Srinivas himself does hardly use the term function, if at all. But by Radcliffe-Brown in the preface (1952b, p. vi), the study is described as an investigation in the social function of religion, showing how the rituals express and maintain the solidarity and continuity of the structural system. An example of rather similar type is given by Monica

Wilson (1954). She is concerned with Nyakyusa interpretation of symbolism in their family rituals and the attitudes and ideas that underlie this symbolism. Her conclusions can be exemplified in such statements as that Nyakyusa funeral rituals are an assertion of the supreme importance of procreation; that they are a public and formal expression of change in status, that there is reflected in them the value set on cattle and the dependence on vegetable foods; that they enhance fear and make men turn to their kinsmen to relieve it. It is argued, furthermore, in line with the views of Radcliffe-Brown, that the sentiments expressed in the Nyakyusa ritual are those necessary to the continuance of the society. As an example of this, it is held that fear makes for the solidarity of the kinship group and for cultural continuity, and when it is fear of supernatural sanctions, it helps to maintain order in Nyakyusa society.

In varying degree all of these studies are examples of functional anthropology, and many of their propositions might, without much difficulty, have been phrased in specifically functional terms. Would there have been any advantage in so doing? For the most part, no. Most of the forms of expression mentioned are equally valid as instruments for the exploration of social relations and the phrasing of valid and sensitive propositions. It also might be argued that if anthropological analysis can proceed without bringing in the terminology of function with its admitted difficulties, then it is better omitted. There is much to be said for such a view. But, in our opinion, it would not be entirely satisfactory. Adoption of it should mean that the alternative terminology is at least equal in flexibility and precision. Examination of the terminology in vogue shows this hardly to be the case in at least two directions. Firstly, expressions such as, that certain types of ritual are an *expression* of changes in status, that they *reflect* other social situations, structures or principles, that they *are an assertion* of certain social values (italics ours), all conceal a quality of relationship. From the crude empirical point of view, these rituals are modes of action; in themselves they may neither assert nor deny anything about society. To say that they are an expression or a reflection of something else, may, as with Leach (1954, pp. 11–16), embody a sophisticated hypothesis. But usually it is only another way of saying less precisely that they are in such relation to the other entity that they are covariant with it. The terms to indicate such relationship sometimes have a double meaning. Thus with the term "expression." This may mean an overt indication by word or act, as when a ritual expresses the importance of a food staple by referring to it in a formula or by using in it some object which is associated with abundance. Or it may involve no overt reference at all. The two entities may be in parallel relationship without the one being at all a direct translation of the other. The reference may be indirect and symbolic—this demands evidence as to the quality of the relationship. The second direction in which some obscurity may arise is in the lack of distinction between social and individual functions. For the most part, the terms of *assertion, expression, reflection,* refer to social relationships, to the position of groups as well as individuals in a social system. But at times they seem to refer also to individual characteristics, behavior, emotions. Thus, in a statement that some of the rites performed at Coorg rice harvest, like tying plants and creepers, locally prolific, to every part of the house, and uttering a prayer for increase before cutting the sheaves, *express* a desire for plenty (Srinivas, 1952, p. 231); the symbolism and overt statement in the rite clearly from the social point of view link it with the importance of abundant rice supplies to the community. Yet the expression of desire may be primarily an individual matter. The same point comes out in Wilson's significant statement (1954, p. 240): "Surely men express in ritual what moves them most, and since the form of expression is conventionalized and obligatory, it is the values of the group which are revealed." Such an equation between individual emotions and group values may be a reasonable assumption in general. But it can by no means be taken as universal. The conventionalized obligatory ritual forms may be taken to represent group values; they often may not correspond to the current emotions of the individuals who operate them and who are moved by a wide range of considerations relating to their own personal aims, resources, and status relations. Hence the inability by such expressions to get beneath the social surface, to indicate why, if the rituals stress, emphasize, express, reflect, enhance, social solidarity and social unity, maintain the structure and continuity of the society, the society can ever suffer change and the rituals themselves wither away. Couching of propositions in functional terms would not in itself avoid these difficulties; it might, however, induce more awareness of them.

In many other studies, too, the concept of function is introduced as occasion serves, usually with the connotation of some significant relation to given or to tacit ends. So with the study of changes in Iroquois kinship by Voget (1953), indicating how changes have been effected through a functional redefinition of status types and roles owing to changing conditions of life, or with the study of Malabar territorial segmentation of caste structures by E. J. Miller (1954), indicating its two functions—of promoting localized interdependent relations between castes, especially at the village level, and supporting the hierarchical order of castes through differential mobility.

Some other contributions, mingling both theoretical and empirical considerations, have embodied some more specific uses of the concept of function. We take examples first from the field of kinship. Gough (1952) has shown from the examination of Nayar and Mappilla material from Malabar how a series of incest prohibition rules of exogamy are to be understood as variants of a matrilineal kinship system. She points out that within the basic kinship pattern each variant is modified uniquely by the means of subsistence of the group concerned and by its position in the political system and is, at the same time, in harmony with the system of moral beliefs which its particular religion sanctions. The range of incest prohibitions of the rules of exogamy is shown in each case to be "a function of the total kinship system." This meaning of function apparently is equivalent to covariation. An equivalent notion is that of "repercussion," as when the Mappilla ban on fraternal polyandry while the levirate is maintained tends to split the family and cause property to be divided every generation shortly after the death of the father. But the concept goes further. The hypothesis that incest prohibitions cannot be isolated for analysis in their own right is regarded as equivalent to the statement that they have *meaning* only in relation to a particular kinship system as a whole. Again, the *function* of Mappilla prohibition on marriage to the daughter of a foster-mother "is to be sought in terms of" Muslim moral values, which would appear to be equivalent to finding meaning of the custom in such values. Yet the interpretation implicitly would seem to go even further. It is stated that in South Malabar the sororate is rare and has no special function, but the levirate is common and enjoined whenever possible: "Its function is to keep fatherless young children in the *taravad* by keeping the mother there as well, and also to avoid the need to pay back the widow's dowry by providing her instead with a second husband (Gough, 1952, p. 100). In form, at least such a statement is teleological and might be paralleled by many from Malinowski. What it illustrates is the ease with which the formal expressions of function slip over from the "mathematical" or "relational" to the teleological because they are so often based upon tacit or implicit assumptions about social ends. It is assumed, in other words, that it is personally desirable, and perhaps socially valuable, to keep fatherless young children in their dead father's group. It is assumed also that repayment of dowry is something which is to be avoided either by persons or groups, though presumably here, there is no assumption that it is socially valuable not to pay. In other words, "function," in this context, is dealing with temporary personal relationships at least as much as with permanent group relationships.

A treatment of some aspects of Yap kinship by Schneider (1953) has some analogies with this. There is the same use of the term "function" as equivalent to operation or relationships. The Yap system depends on what Schneider (1953, p. 215) terms "the device" (apparently implying not creation but only use) of the "condition of life" of the person through whom the kinship is traced. The examination of "how this device works" would seem to be an alternative expression for "the analysis of the functions" of the device. In line with this, Schneider specifically sets out the "functions" of the Yap matrilineal clan—as, regulation of marriage by exogamous rule; provision of sanctuary in war and responsibility in peace; and provision of a widely extended group "of last resort" in borrowing, begging favors, and promoting political ties. The "mathematical" aspect is seen in such a statement as "it is as a function of the maximization of the solidarity between siblings that solidarity in the conjugal relationship is correspondingly minimized." But the notion of function seems to connote that of meaning, also, and to imply some orientation to ends. Schneider suggests that one important function of the use of kinship terms as forms of address is in imposing on the situation a kind of sanction which enforces conformity with the social definition of the relationship. Again he points out that no kinsman, irrespective of his status, is addressed by a kinship term. Here he asks about the meaning of this and suggests that the meaning remains the same as in the case of the nuclear family. Whereas the use of a kinship term serves as a symbol of the normative definition of the relationship, the absence of that symbol permits the relationship to become established on other grounds (Schneider, 1953, pp. 228–229, 233). Bearing in mind what has gone before, the term "meaning" might easily have been replaced by "function."

In an essay on the *kibbutz*, Spiro (1954) discusses the functions of the nuclear family in classical terms, though in order to give point to his thesis that in Israel the kibbutz fulfils the functional roles of the family. He argues that it is able to do this only because it forms a society whose members view one another psychologically as kin. A concept of function of a rather more developed order, stressing even more the relation of custom and belief to psychological and indeed psychobiological elements, is that indicated by Spiro in an earlier study (1952) on Ifaluk ghost belief. His contribution is concerned specifically with the notion of functionalism and with the interpretation of such a notion in teleological terms. He makes full use of the specific functional categories introduced by Radcliffe-Brown and Merton, such as functional and dysfunctional, manifest and latent function. He also less specifically uses the notion of degrees of function, as when he speaks of belief in ghosts as being not the only institution which could serve the *vital function* of protecting an individual from psychological disorganization. The substantial propositions which arise from his analysis of Ifaluk material are suggestive and argued out in some detail. What is interesting also is his complete acceptance of the notion and term "function" as a useful instrument in such an analysis.

Similar frank acceptance of the concept of function as involving social teleology finds full expression in a comparative study of African age groups by S. N. Eisenstadt (1954). He sets out a hypothesis applicable, he thinks, to "the conditions of emergence of the functions of male age sets." He points out that a system of age sets *fulfils functions* which are not dissimilar from those of family and kinship and descent groups, but these age sets are structured according to different criteria. His major hypothesis is that age-sets systems *arise and function* in societies in which the basic allocation of rules is not overwhelmingly determined by membership in kinship groups and where some important integrative functions remain to be filled beyond these groups. Such integrative functions—Eisenstadt uses the alternative word *tasks*—include leadership in war, the organization of public activities such as education, the occupation of economic offices.[11] The hypothesis is based explicitly on various assumptions concerning the functions of age differentiation in a process of socialization and in maintaining the continuity and stability of the social system. Among these functions as seen in terms of age-group organization are: conferring on an individual full social status and membership in the community; freedom, to some extent, from family and kin discipline, with corresponding imposition of self-discipline among his equals; giving important educational experience through both technical and symbolic knowledge; giving a new frame of reference through which the individual can relate himself to the total society and identify himself with its values and symbols. In such treatment, Eisenstadt uses the term "function" with all three implications discussed earlier. First, he treats it as equivalent to a set of associations; second, he treats it as equivalent to basic prerequisite; third, he gives it a more dynamic connotation of a regulative mechanism, at times equivalent to operation of the society or social process itself. In such analysis he also implies not merely that age sets fulfil social requirements, but also that this fulfilment provides the reason for their origin—"Age sets arise to fulfil some of the educational and integrative tasks which are beyond the scope of the family and descent groups" (Eisenstadt, 1954, p. 102). It is this last usage perhaps which is open to criticism. Whatever be the functions which age groups fulfil in contemporary conditions, it may be very much of a question, forever unanswerable in the absence of historical evidence, as to whether such institutions came into being in response to the stated present requirements or whether the original requirements of the society then were very different.

The upshot of the contributions of anthropology in terms of function during 1952 to 1954 may be seen as a relative lack of interest in re-examination of the concept itself but a readiness to utilize the notions it has developed, either with or without specific use of the term. It cannot be said that the full range of Merton's criteria in his "paradigm" yet have been met, or much use made of the elaborate systematic expositions by Parsons and Levy. On the other hand, it does seem that discussion has advanced from the somewhat sterile verbal battles about meaning of the term function to the formulation of more refined and substantial propositions which use its notions or at least its spirit.

---

[11] The author's hypothesis is concerned, of course, only with African societies. It seems not to deal with negative cases and is not intended to apply to more widely differentiated societies of the West.

REFERENCES

Balandier, G.
1954 "Conséquences sociales du Progrès Technique dans les Pays sous-développés." *Current Sociology: La Sociologie Contemporaine*, Vol. III, No. 1. Paris: UNESCO. 75 pp.

Barnes, J. A.
1954 *Politics in a Changing Society*. London: Oxford University Press. 220 pp.

Bateson, Gregory
1936 *Naven. A Survey of the Problems Presented by a Composite Picture of the Culture of a New Guinea Tribe Drawn from Three Points of View*. Cambridge: Cambridge University Press. 286 pp.

Belshaw, C. S.
1954 *Changing Melanesia. Social Economics of Culture Contact*. Melbourne/Wellington: Oxford University Press. 197 pp.

Bidney, David
1953 *Theoretical Anthropology*. New York: Columbia University Press. 506 pp.

Chapple, Eliot Dismore and Coon, Carleton Stevens
1942 *Principles of Anthropology*. New York: Henry Holt & Co. 718 pp.

Colson, Elizabeth
1953 *The Makah Indians, A Study of an Indian Tribe in Modern American Society*. Manchester: University Press. 308 pp.

DITTMER, KUNZ

1954 *Allgemeine Völkerkunde. Formen und Entwicklung der Kultur.* Brauschweig: Friedr. Vieweg & Sohn. 314 pp.

DURKHEIM, EMILE

1915 *The Elementary Forms of the Religious Life, A Study in Religious Sociology* (translated by Joseph Ward Swain). London: Allen & Unwin. 456 pp.

1932 *De La Division du Travail Social.* 6th ed. Paris: Felix Alcan. 416 pp.

EGGAN, FRED

1954 "Social Anthropology and the Method of Controlled Comparison," *American Anthropologist*, Vol. 56, No. 5, Part 1, pp. 743–763.

EISENSTADT, S. N.

1954 "African Age Groups, A Comparative Study," *Africa*, Vol. XXIV, No. 2, pp. 100–113.

EVANS-PRITCHARD, E. E.

1951 *Social Anthropology.* London: Cohen & West. 134 pp.

EVANS-PRITCHARD, E. E. (ed.)

1954 *The Institutions of Primitive Society.* A Series of Broadcast Talks by E. E. Evans-Pritchard, Raymond Firth, E. R. Leach, J. G. Peristiany, John Layard, Max Gluckman, Meyer Fortes, Godfrey Lienhardt. Oxford: Basil Blackwell. 107 pp.

FIRTH, RAYMOND

1948 "Religious Belief and Personal Adjustment," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXVIII, (published 1951), pp. 25–43.

1951 *Elements of Social Organization.* London: Watts. 257 pp.

FORTES, MEYER

1953 *Social Anthropology at Cambridge since 1900. An Inaugural Lecture.* Cambridge: University Press. 47 pp.

GOUGH, E. KATHLEEN

1952 "A Comparison of Incest Prohibitions and the Rules of Exogamy in Three Matrilineal Groups of the Malabar Coast," *International Archives of Ethnography*, Vol. XLVI, No. 1, pp. 82–105. Leiden.

HERSKOVITS, M. J.

1953 *Franz Boas. The Science of Man in the Making.* New York: Charles Scribner's Sons. 131 pp.

HOMANS, GEORGE C.

1950 *The Human Group.* New York: Harcourt Brace & Co. 484 pp.

JAKOBSON, ROMAN

1953 Chapter Two, pp. 11–21, in *Results of the Conference of Anthropologists and Linguists. Indiana University Publications in Anthropology and Linguistics* (Memoir 8 of the *International Journal of American Linguistics*, Supplement to Vol. 19, No. 2). Baltimore: Waverly Press. 67 pp.

JOHANSEN, J. PRYTZ

1954 *The Maori and His Religion.* Copenhagen: Ejnar Munksgaard. 298 pp.

KROEBER, A. L. and others

1953 *Anthropology Today: An Encyclopedic Inventory.* Chicago: University of Chicago Press. 966 pp.

KROEBER, A. L. and KLUCKHOHN, CLYDE

1952 *Culture: A Critical Review of Concepts and Definitions* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XLVII, No. 1). Cambridge, Mass. 223 pp.

LEACH, E. R.

1952 "The Structural Implications of Matrilateral Cross-Cousin Marriage," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXXI, pp. 23–55.

1954 *Political Systems of Highland Burma. A Study of Kachin Social Structure*, with Foreword by Raymond Firth. London: London School of Economics and Political Science. 324 pp.

LEACOCK, SETH

1954 "The Ethnological Theory of Marcel Mauss," *American Anthropologist*, Vol. 56, No. 1, pp. 58–73.

Lévi-Strauss, Claude

1949a *Les Structures Elémentaires de la Parenté.* Paris: Presses Universitaires de France. 639 pp.

1949b "Histoire et Ethnologie," *Revue de Metaphysique et de Morale,* Vol. 58, Pt. 3–4, pp. 363–391. Paris.

1950 "Introduction à l'Oeuvre de Marcel Mauss," Foreword, pp. ix–lii, to *Sociologie et Anthropologie par Marcel Mauss.* Paris: Presses Universitaires de France. 389 pp.

1954 "The Place of Anthropology in the Social Sciences and the Problems Raised in Teaching It," *The University Teaching of Social Sciences: Sociology, Social Psychology, and Anthropology,* pp. 96–124. Paris: UNESCO.

Levy, Marion J., Jr.

1952 *The Structure of Society.* Princeton, N. J.: Princeton University Press. 584 pp.

Linton, Ralph

1936 *The Study of Man: An Introduction.* New York, London: Appleton Century. 503 pp.

Macbeath, A.

1952 *Experiments in Living* (The Gifford Lectures for 1948–1949 delivered in the University of St. Andrews). London: Macmillan. 462 pp.

Malinowski, Bronislaw

1913 *The Family Among the Australian Aborigines.* London: University of London Press. 326 pp.

1926 "Anthropology," *Encyclopaedia Britannica,* 13th ed. (reprinted as "Social Anthropology" in 14th ed.), pp. 131–140.

1927 "Useful and Useless Anthropology," review of E. Pittard, *Race and History* in *The New Republic,* Mar. 16, Vol. L, No. 641, Pt. 2, pp. 109–111.

1931 "Culture," *Encyclopaedia of the Social Sciences,* Vol. 4, pp. 621–645.

1932 *The Sexual Life of Savages in North-Western Melanesia.* 3rd ed. with Special Foreword. London: Routledge. 1, 506 pp.

1936 *The Foundations of Faith and Morals* (Riddell Memorial Lectures, 1934–5, delivered before the University of Durham). Oxford: University Press; London: Humphrey Milford. 62 pp.

1944 *A Scientific Theory of Culture and Other Essays.* Chapel Hill: University of North Carolina Press. 228 pp.

Mandelbaum, David

1949 *Selected Writings of Edward Sapir, in Language, Culture, Personality.* Berkeley: University of California Press. 617 pp.

Mannheim, Karl

1940 *Man and Society in an Age of Reconstruction* (based on Mensch und Gesellschaft im Zeitalter des Umbaus, translated by Edward Shils). London: Kegan Paul. 469 pp.

Merton, Robert K.

1949 *Social Theory and Social Structure. Towards the Codification of Theory and Research.* Glencoe, Ill.: The Free Press. 423 pp.

Miller, Eric J.

1954 "Caste and Territory in Malabar," *American Anthropologist,* Vol. 56, No. 3, pp. 410–420.

Nadel, S. F.

1951 *The Foundations of Social Anthropology.* London: Cohen & West. 426 pp.

Parsons, Talcott

1947 "Introduction," pp. 1–77 in Weber, Max, *Theory of Social and Economic Organization.* London, Edinburgh, Glasgow: William Hodge & Co. 404 pp.

1949a *Essays in Sociological Theory Pure and Applied.* Glencoe, Ill.: The Free Press. 366 pp. (2nd ed. 1954).

1949b *The Structure of Social Action.* 2nd ed. Glencoe, Ill.: The Free Press. 817 pp. (1st ed. 1937).

1951 *The Social System.* Glencoe, Ill.: The Free Press. 575 pp.

Parsons, Talcott and Shils, Edward A.

1951 *Toward a General Theory of Action.* Cambridge, Mass.: Harvard University Press. 506 pp.

Radcliffe-Brown, A. R.

1952a *Structure and Function in Primitive Society* (includes reprint of "On the Concept of Function in Social Science," orig. pub. 1935). London: Cohen & West. 219 pp.

1952b "Foreword," pp. v–ix, to Srinivas, M. N., *Religion and Society among the Coorgs*. Oxford: Clarendon Press. 267 pp.

Rapoport, Robert N.

1954 *Changing Navaho Religious Values. A Study of Christian Missions to the Rimrock Navahos.* Reports of the Rimrock Project Values Series, No. 2 (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XLI, No. 2). Cambridge, Mass. 152 pp.

Redfield, Robert

1953 *The Primitive World and Its Transformations.* Ithaca, N. Y.: Cornell University Press. 185 pp.

Schneider, David M.

1953 "Yap Kinship Terminology and Kin Groups." *American Anthropologist*, Vol. 55, No. 2, pp. 215–236.

Spicer, Edward H.

1954 *Potam: A Yaqui Village in Sonora* (American Anthropological Association Memoir No. 77, Vol. 56, No. 4, Part 2). 220 pp.

Spicer, Edward H. (ed.)

1952 *Human Problems in Technological Change. A Casebook.* New York: Russell Sage Foundation. 301 pp.

Spiro, Melford E.

1952 "Ghosts, Ifaluk, and Teleological Functionalism." *American Anthropologist*, Vol. 54, No. 4, pp. 496–503.

1954 "Is the Family Universal?," *American Anthropologist*, Vol. 56, No. 5, Part 1, pp. 839–846.

Srinivas, M. N.

1952 (with Foreword by A. R. Radcliffe-Brown) *Religion and Society among the Coorgs of South India.* Oxford: Clarendon Press. 267 pp.

Tax, Sol

1953 *Penny Capitalism: A Guatemalan Indian Economy* (Smithsonian Institution, Institute of Social Anthropology Publication No. 16). Washington, D. C.: U. S. Government Printing Office. 230 pp.

Tax, Sol *et al.* (eds.)

1953 *An Appraisal of Anthropology Today*. Chicago: University of Chicago Press. 395 pp.

Voget, Fred

1953 "Kinship Changes at Caughnawaga," *American Anthropologist*, Vol. 55, No. 3, pp. 385–394.

Watson, James B.

1952 *Cayuá Culture Change: A Study in Acculturation and Methodology* (American Anthropological Association Memoir No. 73, Vol. 54, No. 2, Part 2). 144 pp.

Weber, Max

1947 *The Theory of Social and Economic Organization*, being Part I of *Wirtschaft und Gesellschaft* (translated by A. R. Henderson and Talcott Parsons; revised and edited with introduction by Talcott Parsons). London, Edinburgh, Glasgow: William Hodge & Co. 404 pp.

Wilson, Monica

1954 "Nyakyusa Ritual and Symbolism," *American Anthropologist*, Vol. 56, No. 2, Part 1, pp. 228–241.

Comparisons in Cultural Anthropology

OSCAR LEWIS[1]

Dr. Lewis has been Professor of Anthropology at the University of Illinois since 1948. Previously he was Field Representative for Latin America, Office of Indian Affairs; Social Scientist for the United States Department of Agriculture; and Visiting Professor at the University of Havana, Cuba. During 1952-1954 he was a Consulting Anthropologist in India for the Ford Foundation. His field research has been conducted in the United States, Cuba, Mexico, Spain, and India. He is author of: On the Edge of the Black Waxey: A Cultural Survey of a Texas County, 1948; and Life in a Mexican Village: Tepoztlán Restudied, 1951.

INTRODUCTION

IT is part of the thesis of this paper that there is no distinctive "comparative method" in anthropology, and that the persistence of this expression has led to unnecessary confusion and artificial dichotomies in much of the theoretical writing on this subject. Thus, we prefer to discuss comparisons in anthropology rather than the comparative method. This simple semantic change makes a difference, for it highlights the fact that the method of a comparison is only one aspect of comparison, other relevant aspects being the aims or objectives, the content, and the location in space of the entities compared. Our subject at once becomes broader than most considerations of "the comparative method" and includes comparisons within a single society as well as cross-cultural comparisons, comparisons over time as well as in space.

The unfortunate tendency to identify "the comparative method" with a particular type of research design or anthropological school of thought, dates back to 1896 when Boas identified the comparative method with the early evolutionists. His juxtaposition of his "historical method" against the comparative method of the evolutionists obscured what is fundamental for our purpose, namely, that both used comparisons toward the end of arriving at general laws. Of course, Boas was not against comparisons or comparative method. He wanted to improve it and specifically referred to his historical method as an improved comparative method. What we should like to emphasize is that the differences in anthropology are not between approaches which use comparisons and those which do not. All approaches—functionalism, diffusionism, kulturkreis, or evolutionism—make use of comparisons, but in different ways and for different ends.

Comparison is a generic aspect of human thought rather than a special method of anthropology or of any other discipline. Laymen as well as scientists make comparisons. The major difference between common-sense, everyday comparisons by the layman and those by the scientist, is that the latter, in their systematic study of similarities and differences, strive for a greater degree of control by utilizing the methods of correlation and co-variation.

It does not follow, however, that those

---

[1] We are grateful to the Behavioral Sciences Division of the Ford Foundation for a grant in aid, a portion of which was used for research assistance in the preparation of this study.

studies which use quantification and express co-variation statistically are the only valid, useful, or scientific studies. Nor must all comparisons necessarily be directed toward testing hypotheses or arriving at general principles of societal development, worthwhile as these objectives are. Comparisons may have other values, depending upon the nature of the data and the objectives of the study. And so long as cultural anthropology feels a sense of kinship with the humanities as well as with the natural sciences, comparisons which increase our general understanding shall have their rightful place.

Most anthropological writing contains comparisons. Even the monographs which are primarily descriptive generally make comparisons with earlier literature, and many have a final comparative chapter. Textbooks use comparisons as illustrations, theoretical articles compare methods, points of view, and schools of thought, or review the literature of an area in a comparative manner. There are comparisons between single culture traits, between institutions, between subcultures, between areas, nations, and civilizations. There are synchronic and diachronic comparisons, controlled and uncontrolled, localized and global, formal and functional, statistical and typological. The kinds of comparisons made by anthropologists seem to be of an endless variety indeed.

This paper attempts to classify and analyze comparisons found in the literature for the five year period 1950–1954 in order to determine the major types of comparisons, their objectives, methods, research designs, and the location in space and time of the entities compared. References to earlier comparative studies will be made only when necessary for background purposes. The scheme used for the classification of comparisons will be presented later. Here let us first examine some of the highlights of recent theoretical articles on comparative method.

Within the past five years there have appeared an unusually large number of theoretical writings dealing with comparative method in anthropology.[2] In addition, an equally large number of books and articles have touched upon problems of comparative method indirectly or in passing. In all, probably more has been written on this subject within the past five years than within any comparable period since Boas published his famous piece of 1896. It is noteworthy that many of the authors cited above refer back to Boas, accepting, modifying, or rejecting his position. This concentration of interest in comparative method is probably a reflection of the growing maturity of anthropology as a science, the ever-increasing concern of anthropologists with problems of theory and method, and the accumulation of great masses of data which cry out for systematic comparative analysis.

A review of the literature cited above suggests a number of observations. Many of the theoretical discussions still use the phrase "the comparative method" as if it were a unitary and distinctive method of anthropology. For example, Ackerknecht (1954), who uses the expression "the comparative method" over thirty times in his short piece without once defining it, treats it almost as if it were a culture trait. He attempts to trace its introduction into anthropology from the biological and natural sciences and finally concludes that it was probably a case of convergence, if not of independent invention! He writes of the method as being "abandoned" by the functionalists and cites (p. 117) the publication of Murdock's *Social Structure* in 1949 as a sign of "a renaissance of the comparative method." Kroeber (1954, p. 273), in commenting on Ackerknecht's article, quite properly points out that ". . . the comparative method has never gone out, it has only changed its tactic."

The titles of some of the papers on comparative anthropology are in themselves revealing. Thus Radcliffe-Brown (1951), like Ackerknecht, follows the old tradition

[2] Murdock, 1950a, b; Steward, 1950; Evans-Pritchard, 1951; Nadel, 1951; Radcliffe-Brown, 1951; Köbben, 1952; Ackerknecht, 1954; Kluckhohn, 1953, 1954; Lowie, 1953; Schapera, 1953; Eggan, 1954; Herskovits, 1954; and Whiting and colleagues, 1954.

and calls his paper "The Comparative Method In Social Anthropology." He gives two major purposes of comparisons, the reconstruction of history, which he identifies with ethnology, and the discovery of regularities in the development of human society, which he identifies with social anthropology. He frankly defines the comparative method as a library method of "arm-chair anthropologists" and calls for more rather than less armchair anthropology. He writes (1951, p. 15):

> At Cambridge sixty years ago Frazer represented armchair anthropology using the comparative method, while Haddon urged the need of intensive studies of particular societies by systematic field studies of competent observers. The development of field studies has led to a relative neglect of studies making use of the comparative method. This is both understandable and excusable, but it does have some regrettable effects. The student is told that he must consider any feature of social life in its context, in its relation to the other features of the particular social system in which it is found. But he is often not taught to look at it in the wider context of human societies in general.

Singer's summary (1953, p. 362) of the discussion on Schapera's paper, titled "Some Comments on Comparative Method In Social Anthropology," is germane here. He writes,

> Schapera's original paper which was circulated before the conference was entitled 'Some Thoughts on the Comparative Method in Social Anthropology.' . . . dropping the 'the' from the title of the revised paper is perhaps the most eloquent, if inconspicuous, testimony of the impact of the conference: for Schapera and the other participants agreed that there is no single method of comparison in anthropology, that method is largely determined by problem, and that a method appropriate for the comparison of kinship systems is not necessarily most appropriate for other types of cross-cultural comparisons.

Eggan's excellent paper "Social Anthropology and the Method of Controlled Comparisons" (1954) gets away from "the comparative method" in the title and speaks instead of methods of comparisons. But even Eggan lapses again and again into the older terminology. He writes (p. 747), "In the United States . . . the comparative method has long been in disrepute, and was supplanted by what Boas called the 'historical method.' In England, on the other hand, the comparative method has had a more continuous utilization." Or again, he writes (p. 749) that most of Boas' students were predisposed against "the comparative method" and "hence against any generalizations which require comparisons." The use of the term "the comparative method" makes the above statements confusing. It is doubtful that the Boas students were against all comparisons. Certainly they have contributed their share of comparative studies. Rather, they objected to what they thought were uncontrolled comparisons, comparisons out of context.

Murdock (1954) and Whiting (1954) think of the comparative method almost exclusively in terms of the testing of hypotheses on a global scale with a heavy reliance upon statistics. Schapera (1953) tends to identify the comparative method with the intensive study of limited areas as a prerequisite to testing regionally derived general propositions in other areas. Eggan recognizes the validity and usefulness of a wide range of comparisons from those within a single community to global comparisons, but prefers the more limited and controlled comparisons to the more global and less controlled.

Lowie (1953) and Nadel (1951) take exception to the trend of identifying "the comparative method" with a particular school or approach in anthropology. Lowie challenges the meaningfulness of equating the old dichotomy of historians versus generalizers with that between the ethnographers and social anthropologists, as suggested by some British anthropologists. He makes the point that comparisons are just as important in an intensive study or descriptive integration of a single community as they are in cross-cultural analysis, and sees the two as part of a single continuum of comparisons. An intensive study of a single community "implies cognizance of correlated phenomena and thereby precludes erroneous inferences due to the currency of the same labels. . . . Complete description involves a *global* survey of correlations because only such a global survey guarantees accurate definition of the cultural phenomenon under discussion in relation to its real or apparent equivalents elsewhere." (p. 532).

Nadel offers us by far the most systematic and comprehensive treatment of comparative method. He defines it in terms of the systematic study of similarities and differences through the use of correlation and co-variation. It is therefore not a distinctive method of anthropology, but one shared by all the sciences. Following Durkheim, he distinguishes (1951, p. 226) three applications of the method of co-variation: (1) in the study of broad variations in particular modes of action or relationships within a single society; (2) in the study of the same society at different periods of time or of several essentially similar societies which differ only in certain respects; (3) in the study of numerous societies of a widely different nature. Nadel does not regard these three applications "as separate and independent lines of inquiry." Moreover, he believes that regularities can be derived from all three applications, the major differences being that the regularities derived from "narrow-range applications," i.e., within a single society, "are themselves of narrow applicability; they would exhibit specific phenomena present in only a limited number of societies. . ." (p. 227).

While Nadel recognizes the value of cross-cultural comparison and its distinctive place in anthropology as compared with other disciplines, he would not define anthropology exclusively in terms of cross-cultural studies. Indeed, he takes exception to a statement of Radcliffe-Brown which suggests that a study of a single society cannot "demonstrate" co-variations but can only lead to hypotheses which have to be tested in other societies. Nadel writes (1951, p. 240):

> Though this conclusion undoubtedly often holds, I do not think it applies invariably. Thus, if we include time perspective and cultural change in our enquiry, the necessary co-variations will be available, too, in societies sufficiently differentiated to exhibit the "broad" variations in the behavior of different group sections we spoke of before. Furthermore, in any society, . . . inasmuch as cultural elements 'hang together' in their own institutional setting, they do so by means of co-variations; the standardized, predictable patterns of behavior which are the elements of social existence mean nothing else.

Many of the recent writings on comparative methods and problems in anthropology express the particular theoretical preferences of the authors but they do not provide us with a systematic examination and analysis of contemporary comparative research. In this sense, the theoretical writing has lagged behind the field work. Steward (1950) reviews a good sample of community studies and older ethnographic studies and points to difficulties in comparability due to the uneven coverage which seems to depend largely upon individual interests. But he does not deal with the vast number of comparative studies in the literature. Similarly, Kluckhohn (1953) raises important theoretical problems in connection with the comparability of anthropological data and reports on the comparability of anthropological monographs based upon the examination of the table of contents of ninety monographs, but does not deal extensively with comparative studies as such. The single article within the past five years which makes some attempt at an evaluation of comparative research is the excellent piece by Köbben (1952), titled "New Ways of Presenting an Old Idea: The Statistical Method in Social Anthropology," in which he critically reviews *one type* of comparative study. His work will be cited later.

ANALYSIS AND CLASSIFICATION OF COMPARISONS

A total of 248 writings dealing with comparisons, within the period 1950–1954, were examined in the preparation of this paper.[3] These include 52 books, 173 articles, and 23 dissertations. Twenty-eight of these writings deal primarily with theory and method in comparative anthropology and have been summarized earlier. The remaining 220 writings (45 books, 152 articles, and 23 dissertations) are reports of comparative research. The 152 articles with which we will be concerned were found after an examination of 23 scientific journals, including most of the major anthropological journals which are concerned with cultural or social anthropology. While the coverage is not exhaustive, it probably represents about ninety per cent of the comparative writings in the past five years.[4] Only a few of the dissertations cited were available to the writer. The analysis of most of the dissertations is based primaly upon published abstracts and is therefore partial and tentative.

---

[3] I am grateful to Dr. Ruth Landman for bibliographical research assistance in preparation of this paper.

In the light of recent discussions as to whether British or American anthropologists were more vitally concerned with comparative studies, it is interesting to note that 40, or seventeen per cent, of the 220 writings, were British publications. This is a high proportion in view of the relatively small number of British anthropologists. However, it demonstrates that American anthropologists are also active in the field of comparative studies. Our survey of the major French and German anthropological periodicals yielded very few comparative studies for the period covered.

In our analysis and classification of the above writings five broad dimensions of comparisons were considered: (1) the location in space of the entities compared, (2) the content, (3) the aims of the comparisons, (4) methods of obtaining data, and (5) research design. These dimensions were, in turn, subdivided so that each comparative study was judged against a check list of numerous items. (See Table 1.)

The geographical distribution of the comparative studies is shown in Table 2 (note that Ie and If have been combined, and Ib divided as between continents or nations or as within one continent): It can be seen that the greatest number of studies occur in North America and Latin America, the smallest number in Europe and Oceania; Africa and Asia hold an intermediate position. Although the location of the entities to be compared may seem like a relatively unimportant consideration, we find that it correlates significantly with the other major categories, but especially with methods. Comparative studies within a single culture area seem, by and large, to be interested in controlling the greatest number of variables and in relatively modest and limited goals. Global comparisons generally have more ambitious goals, and seek world-wide typologies or evolutionary sequences.

The relationship between methods used and the location of the entities compared can be seen in Table 3.

One of the most striking conclusions to be drawn from the data in Table No. 3, is that comparative studies in anthropology can no longer be defined as library studies. Each of the three methods, library comparisons, library plus field work, and primarily field work comparisons, are used about equally.

As we move from the global and larger categories to the smaller ones, we find an increasing reliance upon field work. Conversely, as we go from the smaller to the larger categories (Table 4) we find an increasing use of library comparisons.

The inverse relationship is most striking when we compare the two extremes of our geographical categories, i.e., global or random comparisons as over against comparisons within a single local group or culture (Column I versus VI in Table 3). In the former, there is a complete absence of comparisons based primarily upon field work and a predominance of library comparisons. In the latter, there are no library comparisons and a large number of studies based on field work. The zero scores in Column I and Column VI, Table No. 3, though understandable in terms of the nature of the research, are by no means inevitable. As comparative field research designs organized on a world-wide basis increase (for example, the Cornell Project

---

[4] Unfortunately the two major Indian anthropology journals were not available to the writer and so articles and books on India are not well covered.

TABLE 1

Outline For the Classification and Analysis of Comparative Studies

- I. Location in space of the entities compared[5]
  - a. comparisons of cultures or aspects thereof selected randomly over the globe, i.e., global comparisons
  - b. comparisons of societies or aspects thereof located in different nations or major civilizations
  - c. comparisons within a nation
  - d. comparisons within a single culture area (for example, the Plains or Southwest in the U.S.)
  - e. comparisons of local groups within a single culture (for example, different bands within a single tribe, or between two Blackfoot Indian tribes)
  - f. comparisons within a single local group (band, village, or other type of localized settlement)
- II. Content of comparisons
  - a. material culture
  - b. settlement pattern
  - c. ecology
  - d. technology
  - e. economics
  - f. social organization
  - g. political organization
  - h. religion
  - i. mythology
  - j. art
  - k. warfare
  - l. personality and culture
  - m. life cycle
  - n. sex
  - o. disease
  - p. relations with other communities
  - q. acculturation and culture change
  - r. race relations
  - s. law
  - t. values
  - u. total culture
- III. Aims of the comparisons
  - a. establish general laws or regularities
  - b. document range of variation in the phenomena studied
  - c. document distribution of traits or aspects of culture
  - d. reconstruction of culture history
  - e. test hypotheses derived from Western society
  - f. test hypotheses derived from non-Western societies
- IV. Methods of obtaining data
  - a. library comparisons
  - b. comparisons based upon library data plus field work
  - c. comparisons based primarily upon field work
- V. Research design
  - a. statistical comparisons
  - b. broad typological comparisons
  - c. descriptive, functional analyses of one or more aspects of culture
  - d. descriptive and analytic comparisons of total cultures
  - e. restudies by the same investigator
  - f. restudies by different investigators

---

[5] Most of the geographical categories under I. above are self-explanatory. Categories Ic. and Id. are intended to distinguish between tribal studies of peasantry, rural, and urban groups. The culture area is taken as the frame of reference of the former, the nation for the latter

TABLE 2

LOCATION OF STUDIES

	Oceania	*Asia*	*Africa*	*Europe*	*Latin America*	*North America*	TOTAL
Random or global comparisons (34)	–	–	–	–	–	–	–
Comparison between continents or nations (20)	2	9	2	6	8	6	33 (13 repeat)
Comparison within one continent (31)	1	5	8	0	8	9	31
Comparison within one nation (31)	0	9	1	3	10	8	31
Comparison within one culture area (70)	10	2	17	0	14	27	70
Comparison within one group or culture (34)	7	3	2	0	9	13	34
Total	20	28	30	9	49	63	

TABLE 3

DISTRIBUTION OF METHODS BY CATEGORY OF COMPARISON

Method	I. Random or global comparisons (34)	II. Comparison between continents or nations (20)	III. Comparison within one continent (31)	IV. Comparison within one nation (31)	V. Comparison within one culture area (70)	VI. Comparison within one group or culture (34)	Total number of cases
Library comparison	28	6	20	3	23	0	80
Comparisons based upon field work and library data	6	6	7	6	37	9	71
Comparison based primarily upon field work	0	8	4	22	10	25	69

TABLE 4

DISTRIBUTION OF METHODS OF THE THREE LARGER CATEGORIES COMPARED WITH THAT OF THE THREE SMALLER CATEGORIES

Method	Large groups (I, II, III)	Small groups (IV, V, VI)
Library comparisons	63.5%	19.2%
Comparisons based on field work plus library data	22.3%	38.5%
Comparisons based primarily upon field work	14.1%	42.2%

on the effects of technological change and the Whiting field study of socialization in five cultures, now under way), the zero scores will disappear. Similarly, with the increase of restudies of local communities by the same or different investigators, library comparisons within this category will be possible.

Another interesting aspect of the relationship between method and geographical categories can be seen by comparing the distribution of methods in the one nation category (peasantry and rural studies) with the culture area category (tribal studies). See Columns IV and V, Table 3. Seventy-one per cent of the studies in the former as compared to only fourteen per cent in the latter are based primarily upon field work. Moreover, twenty-nine per cent of the comparisons within a nation based primarily upon field work, were done cooperatively by research teams, rather than by a single investigator, as over against one per cent within a single culture area. Since the comparative study of peasantry is a much more recent trend in anthropology than comparative tribal studies, it is here that we find the greatest concentration of field work and cooperative research. However, comparisons based upon tribal studies still outnumber the others by more than two to one.

The distribution of content in the 220 studies examined shows that the bulk of comparative work is being done in six fields, social organization, 68; culture change and acculturation, 65; total culture, 39; economics, 30; religion, 27; culture and personality, 21. Studies of social organization and culture change each constitutes approximately thirty per cent of the total number of studies. The relatively high number of total culture comparisons is a tribute to the holistic approach of many anthropologists. The fields in which we find the fewest comparative studies are race relations, 1; law, 2; relations with other communities, 3; sex, 3; life cycle, 4; mythology, 5; warfare, 5; settlement patterns, 7; and art, 8.

It will be seen (Table 3) that sixty-one per cent of all the studies are within the three smaller categories and thirty-nine per cent in the three larger categories. If we assume that the comparisons within small geographical areas give one greater control than widespread comparisons, we might interpret the above distribution to mean that contemporary comparative anthropology has moved a great distance toward the limited and controlled comparisons which Eggan and others have called for. Studies of social organization and culture change are concentrated in the smaller geographical categories. Thirty-five per cent of all the studies of culture change and acculturation are found concentrated in the category of a single community or culture.

The classification of the writings in terms of the theoretical aims of the comparisons proved extremely difficult because of the lack of any explicit statement in so many of the writings. The categories we have listed in our outline must therefore remain as items for future analysis of comparative studies. However, some general findings can be given here. Approximately forty per cent of the studies are descriptive, functional, comparative analyses of one or more aspects of culture, which seek to establish the relationship between variables, either for the purpose of establishing typologies or refining existing types. Approximately thirty per cent of the studies deal with acculturation and culture change. The culture change studies are generally historical reconstructions intended to show the direction of change. Only a few studies explicitly formulate developmental hypotheses. Approximately eighteen per cent of the studies are concerned primarily with demonstrating the range of variation in the phenomena studied; another eight per cent are straight distribution studies, and three per cent are attempts to delineate or redefine the nature of culture areas. Let us now examine the studies in more detail.

GLOBAL OR RANDOM COMPARISONS

Twelve books, 18 articles and 4 dissertations making a total of 34 out of 220 writings examined, fall into this category. All have in common the comparison of societies selected either at random or in accord with some special sampling design, but in no case limited to a single culture area, region, nation, or continent. Twenty-seven are library comparisons, and 10 are library plus field work comparisons.

The content covers a wide range, seventeen of our twenty-one content categories (see Table 1). The largest number are studies of social organization (8 cases), followed by economics (4), technology (4), religion (4), socialization (4), disease (4), etc. Seven studies deal with culture change and/or acculturation.

The objectives of these writings show a wide range, from the tracing of single trait distribution, to the testing of one or more hypotheses and to the reconstruction of stages in the history of human society. However, the writings can be divided into sub-groups in terms of a combination of methods and general research design: 1. *Statistical Comparisons* (10 cases),[6] 2. *Broad Typological Comparisons* (6 cases),[7] 3. *Functional Cross-cultural Analysis of One or More Aspects of a Culture* (7 cases),[8] 4. *Simple Distribution Studies* (3 cases),[9] and 5. *Case Books and Texts* (8 cases).[10] The Spicer volume deserves special mention because many of the cases have come out of the Cornell Project in Applied Anthropology, one of the few centrally organized comparative research projects with field stations in major ethnographic areas of the world.

Limitation of space permits us to discuss only two of the five sub-categories above, namely, the statistical and the typological approaches.

Statistical Comparisons

All ten statistical studies are based in part or in whole upon the Cross-Cultural Files and the Human Relations Area Files at New Haven. The strengths and weaknesses of this type of study have received much discussion in the literature. Perhaps the fullest evalution of this approach is to be found in the lengthy discussion of Murdock and Whiting's paper (1951) on "The Cultural Determination of Parental Attitudes," by a panel which included, among others, Escalona, Erikson, and Lee. More recently Köbben has provided a searching analysis in his paper, "New Ways of Presenting An Old Idea: The Statistical Method in Social Anthropology."

The use of the physical sciences as a model, the testing of hypotheses derived primarily from Freudian or Hullian thinking, faith in quantification and large numbers of cases, optimism about the possibility of arriving at general laws, and the definition of the cross-cultural method as the statistical method, are characteristics of some of the writings of members of this group. Whiting (1954, p. 528) for example, in his article on "The Cross-Cultural Method," generalizes the steps he used in his own study on *Child Training and Personality* (1953) to define *the* cross-cultural method. Murdock, repeatedly identifies the cross-cultural method with the statistical method based upon the cross-cultural files. He writes;

> We believe that the day is past when we can depend upon an analysis of single cases or single societies to give us scientific answers. We feel that hypotheses suggested by the exploratory

---

[6] For example, Murdock and Whiting, 1951, "Cultural Determination of Parental Attitudes"; Ford and Beach, 1951, *Patterns of Sexual Behavior;* Charles, 1953, "Drama in Shaman Exorcism"; McClelland and Friedman, 1952, "A Cross-Cultural Study of the Relationship between Child-training Practices and Achievement Motivation Appearing in Folk-Tales"; Whiting and Child, 1953, *Child Training and Personality: A Cross Cultural Study.*

[7] For example, Redfield, 1953, *The Primitive World and Its Transformations;* Meggers, 1954, "Environmental Limitations on the Development of Culture"; Fried, 1952, "Land Tenure, Geography and Ecology in Contact of Cultures."

[8] For example, Freedman and Ferguson, 1950, "The Question of 'Painless Childbirth' in Primitive Cultures"; Aberle, 1952, "'Arctic Hysteria' and Latah in Mongolia"; Erikson, 1950, *Childhood and Society;* James, 1952, "Religion and Reality."

[9] For example, Anderson and Cutler, 1950, "Methods of Corn Popping and Their Historical Significance"; Balfour, 1951, "Ritual and Secular Uses of Vibrating Membranes as Voice Disguisers."

[10] For example, Spicer (ed.), 1952, *Human Problems in Technological Change;* Hoebel, 1954, *The Law of Primitive Man: A Study in Comparative Legal Dynamics;* Goode, 1951, *Religion among the Primitives;* Herskovits, 1952, *Economic Anthropology.*

> studies of individual societies should be tested by quantitative methods in a large number of societies. (Murdock and Whiting 1951, p. 32).

Murdock (1949, p. 183) believes that "the data of culture and social life are susceptible to exact scientific treatment as are the facts of the physical and biological sciences. It seems clear that the elements of social organization, in their permutations and combinations, conform to natural laws of their own with an exactitude scarcely less striking than that which characterizes the permutations and combinations of atoms in chemistry and of genes in biology." Murdock (1954, p. 30) optimistically writes that anthropology "if it rises to the occasion, may ultimately become the final arbiter of the universality of social science propositions."

While Köbben's discussion deals primarily with the cross-cultural studies published prior to our limiting date of 1950 (i.e., Horton, 1943; Ford, 1945; Murdock, 1949) much of his criticism applies also to the studies covered in our present review. Köbben notes (1952) that the "Grand Design" of the cross-cultural files is not novel and lists as direct precursors the works of Steinmetz, 1898; Tylor, 1889; Hobhouse, Wheeler and Ginsburg, 1930; Niebohr, 1910; and Unwin, 1934. Köbben finds that in some ways the work of these precursors was methodologically more rigorous than the later studies; it was also more meaningful, in that they attempted to deal with the interrelationships between various institutions or aspects thereof, in contrast to the more limited problems posed by the recent studies. For example, they sought answers to the question: How do systems of social organization vary with economic systems or modes of production? On the other hand, by limiting his problem, Murdock arrived at a useful typology of social structures, albeit largely in terms of kinship systems and residence rules. Moreover, Murdock's broad interest in general laws, his concern with evolutionary problems, and his striving for scientific rigor in comparative studies, is a salutary trend in contemporary anthropology.

The questions raised by Köbben and others about the statistical type of study are many and serious, and might be summarized as follows: The units compared are not always truly independent; the conclusions would be changed considerably if the size of the sample were increased; the items compared are taken out of context and are therefore not truly comparable; the items compared are frequently atomized traits rather than functioning wholes; questions asked of the materials are frequently beyond what the data can answer (this applies better to the culture-personality studies than to Murdock's *Social Structure*). The study of Whiting and Child (1953) raises an additional question by its use of a presumed modal or average custom as the basic unit of comparison. It thereby maximizes one of the weaknesses of anthropological reporting of the past, namely, the assumption of an underlying homogeneity in the customs of so-called primitive peoples. We have here indeed a curious combination of sophisticated statistical techniques applied to poor materials in such a way as to eliminate by definition the possibility of studying the range of behavior or custom within any of the societies examined.

Murdock and Whiting (1951) and Whiting (1954) among others, are not unaware of the problems posed by the criticism, and when pressed, have admitted to some crucial weaknesses. For example, when Erikson (1950, p. 38), in discussing the 1951 paper by Murdock and Whiting, suggested that most anthropological data on parental attitudes and child training was extremely uneven and unsystematic and rarely distinguished between observed behavior, ideal patterns, or projections of the investigators' stereotypes, Murdock replied (pp. 40–41):

> "The points he (Erikson) made raise very serious problems. . . . In justification of our method, we can only say that in our selected societies, in general, what the sources report is what the informants said was supposed to be the case, so that the comparisons are generally between two supposed or ideal patterns. We have to assume, to make these results valid, that the difference between the ideal pattern and the

manifest behavior is approximately the same from society to society, which is a very questionable assumption, I grant."

Granting limitations in the data and the methods used, many social scientists find the hypotheses themselves stimulating and suggestive. In this connection it appears to the writer that of all the recent cross-cultural studies of a statistical nature done on the grand scale, Murdock's is the most original and creative in the sense that he is not simply testing Freudian or Hullian hypotheses derived from the data of western societies, but that he comes up with original general propositions derived from the data of non-Western societies.

To this writer one of the contributions of the studies by Whiting is to reveal the serious gaps in anthropological data on culture and personality for cross-cultural comparative purposes and the need for planned comparative field research. Whiting and colleagues are now engaged in such a project, "Field Guide for a Study of Socialization in Five Societies," 1954. The detailed directions and questions to field workers recently prepared by Whiting and colleagues to insure greater comparability of data is evidence of the lessons learned from working with library materials.

Broad Typological Comparisons

The outstanding item is the book by Redfield on *The Primitive World and Its Transformations*, which is a comparison on a vast scale, of mankind all over the world before "civilization," i.e., before the growth of cities, with that after the growth of cities. While recognizing the wide range of cultural differences among precivilized (prior to 6000 B. C.) and contemporary primitive peoples, both of whom are treated together, Redfield (1953, p. 1) attempts to go beyond cultural relativism and asks the question: What do these peoples have in common, irrespective of "whether they lived in the arctic or in the tropics, whether they hunted, fished, or farmed," which sets them apart from civilized man? His findings are stated in terms of the now familiar characteristics of the folk society, namely, isolation, homogeneity, the predominance of the moral order, etc. However, Redfield's major concern is with the broad problem of culture change, of evolution, and of the transformation of the folk societies into other kinds of societies, peasant and urban.

In terms of the global nature of the design Redfield yields nothing to the statistically oriented studies. But unlike the latter, which suffer from atomism, Redfield, in the great humanist tradition, never loses sight of man as a whole, and maintains the sense of the wholeness of culture by his constructed types. But at the same time, the emphasis upon the similarities within the type and the lumping together of prehistoric peoples with contemporary primitive peoples tend to neglect differences. Perhaps this weakness, if it is a weakness, is inevitable when working on such a high level of abstraction without the controls inherent in the more limited kinds of comparisons to be considered later. Moreover, in a recent paper on "The Cultural Role of Cities," Redfield and Singer (1954) take a long step in the direction of correcting the earlier stereotyped urban category by showing the considerable range in the forms and functions of cities in different historical periods in various parts of the world.

Although Steward's recent work on Puerto Rico is in our category of studies within a single nation, his theoretical approach properly belongs here. It too, is a typological approach of a global nature which cuts across culture areas to seek out the phenomena intended for study. It shares some of the strengths and weaknesses of the Redfield approach. It differs from the latter, however, in that it deals with more limited problems, for it strives for empirically derived, rather than ideal, types; it shows greater concern with developmental sequences; it is more selective in the variables treated; and, on the whole, manifests a materialistic rather than an idealistic philosophical position. The major emphasis is upon productive relations, technology, social structure, and ecology. Values and ethics are given much less weight;

indeed, some would feel they are neglected, and perhaps it is this which makes for a somewhat mechanistic approach.

COMPARISONS BETWEEN CONTINENTS OR NATIONS

Three books, 16 articles and 1 dissertation, or a total of 20 out of 220 writings examined, fall into this category. This category is defined by the fact that the comparisons are either between nations or major civilizations as such, or are between societies or aspects thereof, located in different nations or continents. Six are library studies, six are a combination of library and field work, and eight are based primarily upon field work.

The range of content of these studies is narrower than that of the global studies. Studies of religion (7), total culture (6), economics (5), and social organization (3) account for over ninety per cent of all the studies.[11] The studies in this category fall into the following groups: 1. *Comparisons between One or More Major Civilizations* (4 cases),[12] 2. *Studies of Variants of One Culture, or Aspects Thereof, in Two Continents* (6 cases),[13] 3. *Problem Oriented Studies with Examples from Two Continents or Nations* (8 cases).[14] and 4. *Distribution Studies, Independent Invention vs. Diffusion* (2 cases).[15]

The studies in this category lend themselves to a variety of interesting theoretical problems. On the whole, the studies are of two contrasting types: first, those which compare historically related peoples and attempt to show the re-adaptations and reinterpretations of culture traits or institutions in a new setting; second, those which compare historically unrelated peoples. The latter—which predominate in this geographical category—are especially suitable for pointing up contrasts, for testing the applicability of generalizations formulated on the basis of studies in other areas, and for the formulation of new hypotheses.

Hsu's interesting study (1953) is the fullest total cultural comparison between two nations done by an anthropologist in recent years. He contrasts the American "individual-centered" way of life with the Chinese "situation-centered" way of life and examines the manner in which these key concepts are reflected in child training, marriage, economics, government, religion, ethics, art, alcoholism, suicide, etc. The book is based primarily upon library sources, plus insights which have come to Hsu from living in two cultures. Hsu paints with a big brush, combines psychoanalytic and anthropological interpretations, and is often closer to the literary than the scientific tradition.

The studies by Bascom (1950, 1952) and Foster (1951, 1953) share the advantage of first-hand comparative field research in their respective areas. This, combined with the controls inherent in the historical research design, gives their work a fresh quality and lends weight to their findings. Foster's ethnographic research in Spain throws new light on the difficult problem of what is Indian and what is Spanish in Mexico and Latin America. His paper on *cofradia* and *compadrazgo* illustrates the differential role of a common trait or institution in two or more cultures, as well as the differential solution in two cultures to a basic need of both. Bascom's comparison of Cuban worship of African deities with the Yoruba practice of rituals involving stones, blood, and herbs, shows the reinterpretation of a trait cluster in a new setting. Moreover, it shows how a study of Cuba can throw light on the native African institutions, which could not be derived from a contemporary study of Africa alone. In the same sense, it may be possible to learn much of sixteenth-century Spain by a study of contemporary Mexican societies, which could not be learned by a direct study of contemporary Spain. The study by Mintz and Wolf (1950), though not based on comparative field work in the regions compared, relies heavily upon historical controls, and is of a high caliber of scholarship.

---

[11] Some of these studies cover two or three fields and are therefore listed more than once.

[12] For example, Hsu, 1953, *Americans and Chinese*; Patai, 1954, "Religion in Middle Eastern, Far Eastern, and Western Culture."

[13] For example, Bascom, 1950, "The Focus of Cuban Santeria"; Mintz and Wolf, 1950, "An Analysis of Ritual Co-Parenthood (Compadrazgo)"; Foster, 1953, "*Cofradia* and *Compadrazgo* in Spain and Spanish America."

[14] For example, Lewis, 1954, "Peasant Culture in India and Mexico: A Study in Contrasts"; Steward and Murphy, 1954, "The Mundurucu and the Algonkians: A Parallel in Processes of Acculturation"; Needham, 1954, "Siriono and Penan: A Test of Some Hypotheses."

[15] Erasmus, 1950, "Patoll, Pachisi, and the Limitation of Possibilities"; Hatt, 1951, "The Corn Mother in America and Indonesia."

Lewis's detailed comparison between a Mexican and a north Indian village (1954), based upon field work in each village, covers social organization, economics, politics, and other aspects of culture. He found that despite similarities in their economic base, the two villages had strikingly different systems of social organization. This suggests that we need to restudy the whole problem of peasant communities in greater detail, and within nations and regions, before we can venture broader generalizations about peasantry as a whole.

Goldschmidt's fascinating comparisons (1951) between the Protestant ethic of sixteenth-century Europe with the values of the Hurok-Hupa and other California tribes raises important critical questions about our traditional assumptions as to the relationship between economy, social structure, and value systems. Steward and Murphy, concerned more with structure than culture content, show (1954) how the fur-trapping Montaignais and the rubber-tapping Mundurucu develop similar types of social organization in reaction to a market economy.

Needham (1954), drawing upon a field study of the forest Penan of Borneo offers both confirmatory and contradictory findings on Holmberg's seventeen hypotheses derived from his study of the Siriono of Bolivia. Holmberg's hypotheses were intended to apply to societies "where conditions of food insecurity and hunger frustration are comparable to those found among the Siriono." Penan meets these conditions admirably. However, Needham was able to confirm only five of seventeen hypotheses; two could not be tested, and ten were patently contradicted. Space permits only two examples of the latter. One of Holmberg's hypotheses is that "Aggression will be expressed largely in terms of food: if not, such aggression will be so severely punished that it will be almost entirely repressed." However, Needham writes (p. 230):

> Aggression in Penan society cannot be expressed in terms of food. They do not fight and quarrel about food, do not manifest a strong reluctance to share food, and do not lie about food. On the contrary, they are extremely punctilious about sharing equally in all circumstances . . . .
>
> Penan are born into a culture lacking these aggressive features, and there are no sure signs that it is only severe disapproval of them which represses the assumed aggressive desires. The reaction of Penan culture to food insecurity is not individualistic aggressiveness but scrupulously exact sharing.

Another hypothesis of Holmberg was that "There will be a tendency to kill, neglect, or otherwise dispose of the aged, the deformed young, and the extremely ill. If not, such dependents will occupy a favored status in the society."

To this Needham writes (p. 232):

> This is completely false of the Penan, in conception and action. The old, deformed, and extremely ill are cared for in every way known to the Penan. The group changes or postpones its movements for their sake, even to the considerable detriment of its members. No suggestion so horrifies the Penan as that they might kill, abandon, neglect, or otherwise dispose of such individuals. On the other hand, these are recognized for the burdens they are on the group, and in no way occupy a favored status.

COMPARISONS WITHIN ONE CONTINENT

Three books, 24 articles and 4 dissertations, a total of 31 out of 220 writings, fall in this group, which is defined by the fact that the entities compared, be they single traits, institutions, cultures, or culture areas, are within a single continent.[16] Twenty studies are purely library comparisons, seven combine library and field work, and four are based primarily upon field work.

---

[16] Note our inclusion of Latin America within this category.

The content covers a wide range, 19 out of 21 content categories. The greatest concentration is in social organization (13 cases), followed by total culture (7), acculturation (4), economics (4), art (3), etc.

These studies fall into four groups: 1. *Culture Area Studies* (5 cases),[17] 2. *Typological Studies* (6 cases),[18] 3. *Problem Oriented Studies Comparing One or More Aspects of a Culture* (9 cases),[19] and 4. *Distribution Studies* (9 cases).[20]

The studies in this category, though preponderantly library comparisons are, on the whole, of high quality, and capitalize upon the controls inherent in the study of continuous geographical areas which, though large, have usually been subject to common historical influences. It should be noted that most of the comparative studies of culture areas are found here. Space permits brief consideration of only three studies.

Lowie's paper (1952) "The Heterogeneity of Marginal Cultures" is critical of the traditional typology which distinguishes sharply between food-collectors and food-producers because, among other reasons, it tends to overlook important differences among the cultures within each type. Lowie stresses the wide range of variation in the culture of food-collectors, in ecological adaptation, social organization, and religion, and emphasizes the creativity of such peoples.

Foster's paper (1952), "Relationships Between Theoretical and Applied Anthropology: A Public Health Program Analysis," reports on a study of the operation of a health program in seven Latin American countries, sponsored by the Health and Sanitation Division of the Institute of Inter-American Affairs. It is one of the few comparative analyses in the field of applied anthropology. This cross-cultural study of "folk medicine" and the nature of interpersonal relationships between patients and doctors revealed a number of basic similarities in all the countries and suggested (p. 16) that regularities are of sufficiently wide validity to supply useful guide lines for health programs in other Latin American countries and in other parts of the world where similar culture types exist.

Wolf's paper (1955), "Types of Latin American Peasantry: A Preliminary Discussion," raises the interesting question of the differential effects of the industrial revolution and the growing world market upon peasantry. He distinguishes seven types of peasantry in Latin America. Two of these—the "corporate type" and the "open type"—are treated in detail. The "corporate type" of the highland areas is characterized by location on marginal land, use of a traditional technology, limited production (primarily for subsistence), reliance upon a variety of occupations to supplement income from agriculture, a strong sense of community defined in terms of the politico-religious system, the predominance of the nuclear family, conspicuous consumption geared to religiously oriented communal ends rather than individual maximation, a "cult of poverty" based upon the need to restrict expenditures, and institutionalized envy.

The "open type," located in the tropical humid lowlands, is characterized by production of a cash crop (sugar cane, bananas, coffee, etc.) for the world market, dependence upon outside capital, the private ownership of land, an alternating cycle between reliance upon subsistence crops and reliance upon cash crops, a greater emphasis upon individualism, a weaker sense of community solidarity, the accumulation and display of wealth, and greater social and economic mobility.

---

[17] For example, Naroll, 1950, "A Draft Map of the Culture Areas of Asia"; Murdock, 1951, "South American Culture Areas"; Lange, 1953, "A Reappraisal of Evidence of Plains Influences among the Rio Grande Pueblos."

[18] For example, Smith, 1951, "American Indian Warfare"; Bacon, 1954, "Types of Pastoral Nomadism in Central and Southwest Asia"; Wolf, 1955, "A Typology of Peasantry for Latin America."

[19] For example, Flannery, 1952, "Two Concepts of Power"; Goldfrank, 1952, "The Different Patterns of Blackfoot and Pueblo Adaptation to White Authority"; Lowie, 1952, "The Heterogeneity of Marginal Cultures"; Foster, 1952, "Relationships between Theoretical and Applied Anthropology."

[20] For example, Collins, 1951, "Antiquity of the Pineapple in America"; Riley, 1952, "The Blowgun in the New World"; Spinden, 1952, "Power Animals in American Indian Art."

COMPARISONS WITHIN ONE NATION

Three books, 27 articles, and 1 dissertation, a total of 31 writings out of 220, are in this category, in which we find for the first time that the greatest proportion of the comparative studies are based primarily upon field work. Twenty-two studies are based primarily upon field work, six upon a combination of library work and field work, and only three are purely library comparisons.

While there is a considerable range in the content of these studies—15 of our 21 content categories, there is a marked clustering: acculturation (10), economics (8), social organization (7), total culture studies (6), personality and culture (3), etc.

The studies can be divided conveniently into three groups: 1. *Comparisons of Regions, Sub-cultures, or Total Communities* (8 cases),[21] 2. *The Documentation of Range of Variation* (10 cases),[22] and 3. *Culture Change* (14 cases).[23]

Taken as a whole, the category of comparisons within a nation contains some of the most interesting studies, in terms of content, competence, and originality of research design. The study of Puerto Rico by a few research teams under the direction of Steward is a case in point. In line with his concept of socio-cultural levels of integration, Steward stresses the need to distinguish between what is local and what is national in community and regional studies. Viewing Puerto Rico as a socio-cultural whole characterized as a tropical island with a long history of colonial dependency, "part of a capitalistic world," depending upon cash, credit, an export crop, and importing nearly all of its manufactured goods and about half its food, an attempt was made to formulate and test hypotheses which would hold for Puerto Rico and similar "socio-cultural wholes" anywhere in the world. Critical of national character studies and assuming that no single community was Puerto Rico in microcosm, detailed field studies were organized in four rural communities to sample some of the major crop and community types on the island. In addition, a study was made of prominent upper-class families. Although Steward uses the term "sociocultural" the greatest emphasis is clearly upon economic variables, such as methods of production technology, crops, cash, credit, markets, etc. Moreover, the emphasis is upon structural analysis rather than culture content.

Another very interesting study is the comparison of a highland and lowland Totonac village in Mexico, based upon first-hand field work in each (Viqueira and Palerm, 1954). This is one of the few comparative studies in Mexico since Redfield's *Folk Culture of Yucatan* (1941). Eloxochitlan, the highland community, has an economy of scarcity, population pressure, production primarily for subsistence, strong political controls, community solidarity against the outside, collective labor, monogamy, and the predominance of the nuclear family. The world is viewed as hostile, and sorcery and black magic are all pervasive. Tajin, the lowland community, has an economy of relative abundance, an important cash crop in vanilla, the predominance of the extended family, polygyny, an almost Apollonian sense of order and restraint, and the absence of sorcery. Against this background the authors contrast the differential role of alcoholism. In the highland village, drinking is frequent, generalized, socially sanctioned, and drunkenness is common but inoffensive, leading to social cohesion and euphoria. In the lowland village, drinking is infrequent, drunkenness rare, but when it occurs it almost inevitably leads to violence and homicide.

---

[21] For example, Ryan, 1950, "Socio-Cultural Regions of Ceylon"; Fried, 1952, "Chinese Society: Class as Sub-culture"; Viqueira and Palerm, 1954, "Alcoholismo, Brujeria y Homocidio en dos Comunidades Rurales de México"; Manners and Steward, 1953, "The Cultural Study of Contemporary Societies: Puerto Rico."

[22] For example, Wagley, 1952, *Race and Class in Rural Brazil;* Wolf, 1952, "Growing Up and Its Price in Three Puerto Rican Subcultures"; Sanders, 1953, "Village Social Organization in Greece"

[23] For example, Raper, 1951, "Some Recent Changes in Japanese Village Life"; Du Wors, 1952, "Persistence and Change in Local Values of Two New England Communities"; and Zen Sun, 1952, "Results of Culture Contact in Two Mongol-Chinese Communities"; Caudill, 1952, *Japanese-American Personality and Acculturation;* Van der Kroef, 1954, "Disorganization and Social Change in Rural Indonesia."

COMPARISONS WITHIN A SINGLE CULTURE AREA OR REGION

This category is defined in terms of comparisons within a single culture area or attempts to treat the area as a unit. It is by far the largest category, with a total of 70 studies: 12 books, 45 articles, and 13 dissertations. Twenty-three are library comparisons, thirty-seven library plus field work, and ten primarily field work. The content coverage is extremely broad, including 19 out of our 21 content categories, with only sex and mythology absent. The greatest concentration, however, is in studies of social organization (30 cases), followed by total culture (11), religion (9), economics (5), technology (5), settlement patterns (4), etc.

The 70 studies of this category can be grouped as follows: 1. *Reviews of Research Trends on One or More Aspects of an Area* (4 cases),[24] 2. *Definitions and/or Reconstruction of Culture Areas* (6 cases),[25] 3. *Detailed, Intensive, Functional Analyses of One or More Aspects of Culture in a Small Number of Societies* (14 cases),[26] 4. *Survey Studies of a Single Aspect of Culture among a Larger Number of Societies* (15 cases),[27] 5. *Studies Concerned Primarily with Culture Change, either in Terms of Acculturation or Internal Development (Evolution) or Both* (12 cases),[28] 6. *Studies of Relations between Communities* (3 cases),[29] and 7. *Single-trait Distribution Studies* (5 cases).[30]

Before commenting upon some of the exemplary studies of this category, it should be noted that, within the past few years, a number of anthropologists have reaffirmed the earlier Boasian position on the methodological advantages possible by careful studies within the context of a single culture area. Kluckhohn (1954) quotes the Boas statement that a primary requirement for valid comparison is that the phenomena compared be derived "psychologically or historically from common causes. . . ." Kluckhohn writes (p. 693):

> "One of the main rewards of intensive study of a culture area . . . is that such study eventually frees investigators to raise genuinely scientific questions—problems of process. Once the influences of various cultures upon others in the same area and the effects of a common environment (and its variant forms) have been reasonably well ascertained, one can then operate to a first approximation under an 'all other things being equal' hypothesis and intensively examine the question: why are these cultures and these modal personality types still different in spite of similar environmental stimuli . . . and access over long periods to the influence of generalized area culture or cultures. We are ready now, I believe, for such studies, but no one is yet attempting them seriously."

---

[24] Evans-Pritchard, 1952, "Nilotic Studies"; Elkin, 1953, *Social Anthropology in Melanesia;* Kluckhohn, 1954, "Southwestern Studies of Culture and Personality"; Keesing, 1953, *Social Anthropology in Polynesia.*

[25] For example, Kirchhoff, 1952, "Meso-America"; Smith, 1952, "Culture Area and Culture Depth: With Data from the Northwest Coast"; Read, 1954, "Cultures of the Central Highlands, New Guinea."

[26] For example, Eggan, 1950, *Social Organization of the Western Pueblos;* Richards, 1950, "Some Types of Family Structure amongst the Central Bantu"; Nadel, 1950, "Dual Descent in the Nuba Hills"; Nadel, 1952, "Witchcraft in Four African Societies: An Essay in Comparison"; Smith, 1953, "Secondary Marriage in Northern Nigeria."

[27] For example, Paul and Paul, 1952, "The Life Cycle"; Fischer, 1950, "The Concept of Incest in Sumatra"; Hogbin and Wedgewood, 1953, "Local Grouping in Melanesia"; Berndt, 1951, "Ceremonial Exchange in Western Arnhem Land"; Wisdom, 1952, "The Supernatural World and Curing."

[28] For example, Tax, 1952b, "The Sixteenth Century and the Twentieth"; Lystad, 1951, "Differential Acculturation of the Ahafo-Ashanti of the Gold Coast and the Indenie-Agni of the Ivory Coast"; Leacock, 1954, *The Montagnais Hunting Territory and the Fur Trade;* Secoy, 1953, *Changing Military Patterns on the Great Plains;* Wagley, 1951, "Cultural Influences on Population: A Comparison of Two Tupi Tribes."

[29] Honigmann, 1952, "Intercultural Relations at Great Whale River"; Starr, 1954, "Levels of Communal Relations"; Underhill, 1954, "Intercultural Relations in the Greater Southwest."

[30] For example, Riesenfeld, 1951, "Tobacco in New Guinea and Other Areas of Melanesia"; Suttles, 1951, "The Early Distribution of the Potato among the Coast Salish"; Lemert, 1952, "Stuttering among the North Pacific Coastal Indians."

Schapera (1953, p. 359) claims at least three advantages for the intensive study of single regions as over against global or random comparisons, namely, it eliminates the need for sampling (since all the peoples of an area should be studied), it solves the problem of what is the proper unit for comparative study, and eliminates the need to deal with large numbers of societies. Instead, the method relies heavily upon typologies. Once types have been established for a region, they can be tested in adjoining regions and later in distant regions.

Eggan (1954, p. 746), too, prefers "the utilization of the comparative method on a smaller scale and with as much control over the frame of comparison as it is possible to secure. It has seemed natural to utilize regions of relatively homogeneous culture or to work within social or cultural types, and to further control the ecology and the historical factors as far as it is possible to do so."

Goldman has given us a forceful statement (1955) on the value of the intensive study of culture areas, especially for arriving at generalizations concerning cultural evolution. He writes (p. 1):

> "Cultural evolution, to rephrase Maitland's classic remark, will be history or nothing. If it is to be history its proper focus is the culture area, or to be more precise, the comparative study of culture areas. A culture area comprises historically related societies each showing significant variations from a common pattern. In these variations—their nature, origin and direction—are revealed the basic processes of cultural development in the area—that is, its cultural evolution. From a comparison of culture areas rather than from the comparative study of historically unrelated societies may emerge the more general and more meaningful laws of development."

Despite the recognition of the great potentialities for deriving scientific generalizations by the intensive study of culture areas, there is still a surprising paucity of adequate and well rounded area studies. Kluckhohn (1954, p. 757) and Eggan (1954, p. 689) independently have pointed this out. This impression is confirmed further by our review of the comparative writings of the past five years. The single attempt at a developmental interpretation of a culture area, seeking broad generalizations, and covering most aspects of the culture, is Goldman's study (1955) on "Status Rivalry and Cultural Evolution in Polynesia"—all the more striking as an example of what can be done by purely library research, given an adequate theoretical frame of reference.

Goldman classifies eighteen Polynesian societies into three types: traditional (10 societies), where social status is based primarily upon seniority of age or lineage and social mobility is limited; open (4 societies), "paying lip service to hereditary rank, (they) reserved their honors for outstanding achievement in war and tribal politics. . . . Social mobility was, accordingly, very high and status gradations were uneven"; and stratified (4 societies), where the distinctive feature was "the fundamental cleavage between the landed and the landless." These three types represent stages of social, economic, political, and religious complexity and are due primarily to an evolutionary process of internal development within Polynesia rather than to diffusion, as is evidenced by the fact that single societies seem to recapitulate the development of the entire area. Goldman then summarizes the fundamental changes in the Polynesian status systems in a series of thirty-eight general developmental propositions covering religion, authority, property, social organization, warfare, etc. These propositions serve as hypotheses which can be tested in other areas. One of the distinctive aspects of this work is the central role it gives to value systems; in the case of Polynesia it is status rivalry, and the manner in which it relates changes in value systems to changes in other aspects of culture.

While most of the studies in a single culture area deal with more limited problems than those considered by Goldman, many are models of controlled comparisons approaching very close to experimental studies. Nadel's study (1952) of witchcraft is a model of this type in which a large number of factors are controlled so that a single variable can be tested. In Nadel's study of witchcraft each of the two pairs of societies shows wide cultural similarities with only a few differences, chief of which is the role of witchcraft or its absence. Nadel demonstrates how the witchcraft beliefs are causally related to specific anxieties in social life, in Nupe due to marriage relations, in Mesakin due to relations between mother's brother and sister's son. He stresses the role of adult experiences in addition to infantile experiences in the formation of anxieties in the societies examined, and attempts to test a Freudian hypothesis in terms of his findings.

The research model of Wagley's paper (1951) on differential population trends among two Tupi tribes under the influence of white contact, is much the same as Nadel's, although the problem here is culture change. The tribes examined share many cultural similarities as well as a common language, but are shown to have differed, even in aboriginal times, in the attitudes toward family size, which in turn was related to other differences between them.

COMPARISONS WITHIN A SINGLE LOCAL GROUP OR CULTURE

Twenty-two articles and twelve books, a total of thirty-four items, fall into this category. The range of content is fairly wide, touching upon 15 of our 21 content items. However, the greatest concentration is in studies of culture change and acculturation (22), followed by social organization (8), total culture (7), personality and culture (6), values (4), economics (4), etc. As we have noted earlier, 25 studies are based primarily upon field work and 9 upon a combination of field work and library research.

As a group these studies are fresh and reflect some of the most sophisticated methodological trends, both in field work and research design, to be found in contemporary anthropology. Most of the studies are theoretically eclectic, combining a number of interests and approaches, chief of which is the concern with culture change, functional and historical analysis, restudies, the use of quantification and the documentation of range of variation within a single community, and finally, the control of as many variables as possible so as to approach the experimental method.

It is difficult to classify these studies into sub-groups without considerable overlapping. However, the following sub-divisions may serve for our purpose: 1. *Studies Dealing with Research Methods* (4 cases),[31] 2. *Restudies by the Same Investigator* (3 cases),[32] 3. *Restudies by Different Investigators* (4 cases),[33] 4. *Studies Showing Range of Variation in Culture Forms or Personality* (9 cases),[34] 5. *Acculturation Studies* (6 cases),[35] and 6. *Historical Reconstructions Based upon Library and/or Field Work* (9 cases).[36]

The pros and cons of restudies, both in providing a baseline for the study of culture change and as a test of the reliability of anthropological reporting, have been discussed by Lewis (1951, 1953). However, studies dealing with range of variation, for which Herskovits (1954) has suggested the term "microethnography," deserve further comment.

---

[31] For example, Barnes, 1951, "Measures of Divorce Frequency in Simple Societies"; Goldschmidt and Spindler, 1952, "Experimental Design in the Study of Culture Change"; Colson, 1954, "The Intensive Study of Small Sample Communities."

[32] Redfield, 1950, *A Village that Chose Progress: Chan Kom Revisited;* Mead, 1954, "Manus Restudied: An Interim Report"; and Firth's restudy of Tikopia.

[33] For example, Lewis, 1951, *Life in a Mexican Village: Tepoztlán Restudied;* Firth, 1952, "Notes on the Social Structure of Some South-Eastern New Guinea Communities"; Nett, 1952, "Historical Changes in the Osage Kinship System."

[34] For example, Roberts, 1951, *Three Navaho Households;* Vogt, 1951, *Navaho Veterans, A Study of Changing Values;* Fenton (ed.), 1951, *Symposium on Local Diversity in Iroquois Culture;* Hart, 1954, "The Sons of Turimpi"; Mandelbaum, 1954, "Form, Variation and Meaning of a Ceremony"; and Tremblay, Collier, and Sasaki, 1954, "Navaho Housing in Transition."

[35] For example, Barnouw, 1950, *Acculturation and Personality among the Wisconsin Chippewa;* Hallowell, 1952, "Ojibwa Personality and Acculturation"; Spindler, 1952, "Personality and Peyotism in Menomini Indian Acculturation."

[36] For example, Bascom, 1950, "Ponape: The Cycle of Empire"; Kaplan, 1951, "Changing Functions of the Huanancha Dance at the Corpus Christi Festival in Paracho, Michoacán," México; Hogbin, 1951, *Transformation Scene: The Changing Culture of a New Guinea Village;* Marriott, 1952, "Social Change in an Indian Village"; Schmidt and Schmidt, 1952, *Wichita Kinship: Past and Present.*

These studies are a much needed corrective to the tendency of anthropologists in the past to assume the essential homogeneity of the culture of folk societies or little communities. The demonstration by some of the articles cited above of a wide range in personality, in family life, and in ceremonial forms, within relatively simple and homogeneous societies, highlights the difference between real and ideal culture patterns, leads to a search for more refined concepts than the catch-all of basic personality and culture, and focuses upon the role of additional factors—personal, social, situational, environmental, accidental, etc. The studies by Vogt (1951), Roberts (1951), Voget (1952), Hart (1954), and Mandelbaum (1954) illustrate some of these points.

Despite a presumed Navaho basic personality, Vogt is more impressed by the range of variation in the reactions of twelve Navaho veterans to army life experiences, than by the common elements. He relates the differential changes in attitudes and values to specific life experiences before entering the army as well as to army experiences. As a result we get a picture of acculturation in terms of understandable human beings rather than as stereotypes and averages.

Mandelbaum's vivid and detailed description of a funeral ceremony and its variations within a single community with a population of 1,200, leads him to suggest a typology of variations in terms of invariant patterns, alternative patterns, contingent patterns, elective patterns, patterns of neutral variation, optative patterns, weighted alternatives, and compulsive alternatives. He then discusses the meaning of the modal statements of anthropologists in the light of these variations.

CONCLUSIONS

One of the distinctive characteristics of cultural or social anthropology has been its simultaneous concern with the intensive and holistic study of small societies and their cultures and with the comparative analysis of these same societies and cultures over the entire world. Traditionally, the former has been based upon field work and comparative analysis, the latter upon library studies, with or without the statistical manipulation of large masses of data.

Our survey of the comparative studies over the past five years reveals an important trend in the relationship between these two aspects of our discipline. Comparative anthropology no longer can be defined as a library method and is becoming increasingly based upon field work. Comparisons based upon library research alone constitute only one-third of all the studies examined. Moreover, most anthropologists have had first-hand experience both in the intensive study of small communities and in comparative cross-cultural analysis.

By the traditional definition of comparative anthropology as cross-cultural comparisons, the many comparisons within a single community or culture which we have cited would have been excluded. However, there is a need to broaden our view of comparative anthropology to include the latter type studies, for our theoretical writing has lagged behind the actual field work. We have included such studies, therefore, as a legitimate part of comparative anthropology because they can make an important contribution in their own right toward the formulation of general principles, and in addition can help establish a more solid basis for cross-cultural comparisons by their careful definition of types and their increasing use of quantification. In short, now that anthropology has achieved its historic task of documenting the wide range of variation in the cultures of the world, we can join our sociological brethren and take a closer and more careful look at individual small societies. The numerous studies and restudies of "microethnography" which we have cited reflect this trend. These studies also reveal a much wider range of variation than might have been expected from our earlier overplaying of homogeneity, and this variation, in turn, serves as a basis for comparative analysis.

The trend toward comparisons based upon first-hand field work in more than one society holds great promise for improving the quality of comparative studies. Field work by the same investigator in the societies compared assures greater comparability of data and leads to more refined insights than is generally possible in working with library data alone. It is important that anthropologists become more aware of the advantages inherent in this kind of comparative study. We suspect that many who have done field work in more than a single society have not given us the benefit of their comparative experience, in terms either of their field problems or of detailed comparative analysis of their data.

On the whole, first-hand field experience in different societies is of greatest value for comparative analysis when the societies compared are on the same general socio-economic level. For example, Lewis' study (1942) of the Blackfoot Indians of Canada, a tribal reservation people, was of little help in his later study (1951) of the peasant village of Tepoztlán, Mexico. On the other hand, the study of Tepoztlán was of enormous help in his later studies of peasantry in Spain, Cuba, and India. If this observation is confirmed by the experiences of others, it has some implications for training programs and planning field research for students. For a marked improvement in comparative anthropology, it might be wise to encourage our students to specialize either in tribal, peasant, or rural societies.

Comparative studies in anthropology might be grouped into two broad types: first, comparisons of historically related societies, in which common history, language, and culture serve as controls against which variables may be tested; and second, comparisons of historically unrelated societies in which similarities in form, structure, and process are a basis for establishing typologies or causal relationships between various aspects of culture. These two approaches clearly are reflected in our earlier grouping of studies by the location in space of the entities compared. On the whole, the three smaller spatial categories, i.e., comparisons within a single community or culture, comparisons within a single culture area, and comparisons within a single nation, contain examples of the first approach, while the three larger categories, i.e., comparisons within a continent, between nations and continents, and global comparisons, contain examples of the latter. The major exceptions are the relatively few studies of Africanisms in the New World and of Spanish influences in Latin America.

While highly competent and interesting studies are to be found in each approach, it seems that each has its distinctive strengths and weaknesses. Some of the advantages of the former are: (1) a large proportion of the studies are based upon first-hand comparative field research, (2) there is a greater certainty about the comparability of the data, (3) the wholeness of culture is maintained and aspects of culture are seen in context, (4) a larger number of variables can be studied functionally, and (5) the objectives generally are of limited scope and the research designs more closely approximate those of the experimental method. Certainly the bulk of our model, small-scale, comparative studies are found in this approach. Perhaps the single greatest weakness to be noted is the lack of broad developmental hypotheses and the paucity of intensive comparative analyses of culture areas as wholes.

The comparative studies based upon historically unrelated societies are, as a whole, more ambitious, seek broader generalizations on a wider scale, in terms either of universals, world-wide typologies, or evolutionary sequences, and are based primarily upon library studies rather than field work. Here we must distinguish between the statistical studies which rely upon a large number of cases, control only a few variables, and tend to atomize culture, and the broader typological studies which seek to maintain the wholeness of culture by establishing types based upon form, structure, content, and process. Though lacking many of the controls inherent in the more limited studies, many of these studies seem more daring and give the satisfaction which comes from painting with a big brush and searching for general laws.

One of the problems of contemporary anthropology is to develop a strategy of research which will combine the strengths of each of the two major approaches outlined above. The quality and reliability of comparative cross-cultural analysis can hardly be better than that of the original field data upon which it is based. As the intensive studies of particular societies improve, they make possible more meaningful and higher quality comparative studies. Similarly, comparative studies point up the weaknesses or lacks in data, confirm or refute favorite hypotheses, and help thereby to guide further field research. Some anthropologists prefer to wait for better data from single societies before attempting world-wide comparisons. Others utilize whatever data is now available on the ground that we cannot afford to lose time. Others would change the research design and employ more limited and controlled comparisons. Finally, still others place their greatest faith in organizing comparative field research projects around specific problems of limited scope.

In conclusion, our survey of the literature of the past five years has revealed a remarkably large number of comparative studies of high quality, a broad coverage of subject matter, a variety of methods and approaches, a wide range of objectives, and a healthy eclecticism which speaks well for anthropology and its future.

REFERENCES

THEORETICAL WRITINGS

ACKERKNECHT, ERWIN H.

1954 "On the Comparative Method in Anthropology," pp. 117-125 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology.* Minneapolis: University of Minnesota Press. 323 pp.

BECKER, HOWARD

1954 "Anthropology and Sociology," pp. 102-159 in Gillin, John (ed.), *For A Science of Social Man.* New York: The Macmillan Company. 289 pp.

BIDNEY, DAVID

1954 "The Ethnology of Religion and the Problem of Human Evolution," *American Anthropologist*, Vol. 86, No. 1, Feb., pp. 1-18.

BRAM, JOSEPH

1953 "The Application of Psychodrama to Research in Social Anthropology," *Transactions of the New York Academy of Sciences*, Vol. 151, No. 7, pp. 253–257.

EGGAN, FRED

1954 "Social Anthropology and the Method of Controlled Comparison," *American Anthropologist*, Vol. 56, No. 5, Pt. 1, pp. 743–763.

EVANS-PRITCHARD, E. E.

1951 *Social Anthropology.* London: Cohen and West. 134 pp.

FIRTH, RAYMOND

1951a "Contemporary British Social Anthropology," *American Anthropologist*, Vol. 53, No. 4, Pt. 1, pp. 474–489.

1951b *Elements of Social Organization.* New York: Philosophical Library. 257 pp.

GOLDSCHMIDT, WALTER

1950 "Social Class in America—A Critical Review," *American Anthropologist*, Vol. 52, No. 4, Pt. 1, pp. 483–498.

HALLOWELL, IRVING A.

1954 "Psychology and Anthropology," pp. 160–226 in Gillin, John (ed.), *For A Science of Social Man*, New York: The Macmillan Company. 289 pp.

HENRY, JULES

1953 "Direct Observations and Psychological Tests in Anthropological Field Work," *American Anthropologist*, Vol. 55, No. 4, pp. 461–480.

HERSKOVITS, MELVILLE J.

1954 "Some Problems of Method in Ethnography," pp. 3–24 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology.* Minneapolis: University of Minnesota Press. 323 pp.

HILGER, SISTER M. INEZ
1954 "An Ethnographic Field Method," pp. 28–42 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology*. Minneapolis: University of Minnesota Press. 323 pp.

KLUCKHOHN, CLYDE
1953 "Universal Categories of Culture," pp. 507–523 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.
1954 "Southwestern Studies of Culture and Personality," *American Anthropologist*, Vol. 56, No. 4, Pt. 1, pp. 685–697.

KÖBBEN, A. J.
1952 "New Ways of Presenting an Old Idea: The Statistical Method in Social Anthropology," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXXII, Pt. 2, pp. 129–146.

KROEBER, A. L.
1954 "Critical Summary and Commentary," pp. 273–299 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology*. Minneapolis: University of Minnesota Press. 323 pp.

KROEBER, A. L. and KLUCKHOHN, CLYDE
1952 *Culture: A Critical Review of Concepts and Definitions*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. XLVII, No. 1). Cambridge, Mass. 223 pp.

LEVY, MARION J., JR.
1952 *The Structure of Society*. Princeton, N. J.: Princeton University Press. 584 pp.

LEWIS, OSCAR
1953 "Controls and Experiments in Field Work," pp. 452–475 in Kroeber, A. L. and others, *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

LOWIE, ROBERT H.
1953 "Ethnography, Cultural and Social Anthropology," *American Anthropologist*, Vol. 55, No. 4, Oct., pp. 527–534.

MURDOCK, G. P.
1949 *Social Structure*. New York: Macmillan. 387 pp.
1950a "Feasibility and Implementation of Comparative Community Research," *American Sociological Review*, Vol. 15, No. 6, pp. 713–720.
1950b *Outline of Cultural Materials*. 2nd ed. New Haven: Yale University Press. 56 pp.
1954 "Sociology and Anthropology," pp. 14–32 in Gillin, John (ed.), *For A Science of Social Man*. New York: The Macmillan Company. 289 pp.

NADEL, S. F.
1951 *The Foundations of Social Anthropology*. Glencoe, Ill.: The Free Press. 426 pp.

RADCLIFFE-BROWN, A. R.
1951 "The Comparative Method in Anthropology," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. 81, No. 1, pp. 15–22.

RAY, VERNE F.
1952 "Techniques and Problems in the Study of Human Color Perception," *Southwestern Journal of Anthropology*, Vol. 8, No. 3, pp. 251–259.

SCHAPERA, I.
1953 "Comparative Method in Social Anthropology," *American Anthropologist*, Vol. 55, No. 3, pp. 353–361.

SINGER, MILTON B.
1953 "Summary of Comments and Discussion" (of I. Schapera, "Some Comments on Comparative Method in Social Anthropology"), *American Anthropologist*, Vol. 55, No. 4, pp. 363–366.

SMITH, BREWSTER M.
1954 "Anthropology and Psychology," pp. 32–66 in Gillin, John (ed.), *For A Science of Social Man*. New York: The Macmillan Co. 289 pp.

SMITH, MARIAN W.
1952 "Different Cultural Concepts of Past, Present, and Future, A Study of Ego Extension," *Psychiatry*, Vol. 15, No. 4, pp. 395–400.

STEWARD, JULIAN H.
1936 "The Economic and Social Basis of Primitive Bands," pp. 331–350 in Lowie, R. H. (ed.), *Essays in Anthropology*. Berkeley: University of California Press. 433 pp.

Steward, Julian H.—Cont'd

1950 *Area Research: Theory and Practice* (Social Science Research Council Bulletin 63). New York: Social Science Research Council. 164 pp.

1951 "Levels of Sociocultural Integration: An Operational Concept," *Southwestern Journal of Anthropology*, Vol. 7, No. 4, pp. 374–390.

Whiting, John W. M.

1954 "The Cross-Cultural Method," pp. 523–531 in Lindzey, G. (ed.), *Handbook of Social Psychology*. Cambridge: Addison-Wesley. 2 vols.

Whiting, John W. M. and colleagues

1954 "Field Guide for a Study of Socialization in Five Societies" *(manuscript)*.

GLOBAL OR RANDOM COMPARISONS

Aberle, David F.

1952 "'Arctic Hysteria' and Latah in Mongolia," *Transactions of The New York Academy of Sciences*, Series II, Vol. 14, No. 7, May, pp. 291–297.

Anderson, Edgar and Cutler, Hugh C.

1950 "Methods of Corn Popping and Their Historical Significance," *Southwestern Journal of Anthropology*, Vol. 6, No. 3, pp. 303–308.

Balfour, Henry

1951 "Ritual and Secular Uses of Vibrating Membranes as Voice Disguisers," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXVIII, Pts. 1 & 2, pp. 45–70.

Barnett, H. G.

1953 *Innovation: The Basis of Cultural Change*. New York: McGraw-Hill. 462 pp.

Bohannan, L. M.

1951 "A Comparative Study of Social Differentiation of Primitive Society" (Doctoral dissertation). University of Oxford.

Brown, Julia S.

1952 "A Comparative Study of Deviation from Sexual Mores," *American Sociological Review*, Vol. 17, No. 2, pp. 135–146.

Charles, Lucille H.

1951 "Drama in First-Naming Ceremonies," *Journal of American Folklore*, Vol. 64, No. 251, pp. 11–36.

1953 "Drama in Shaman Exorcism," *Journal of American Folklore*, Vol. 66, No. 260, pp. 95–122.

Erikson, Erik H.

1950 *Childhood and Society*. New York: Norton. 397 pp.

Ford, Clellan S. and Beach, Frank A.

1951 *Patterns of Sexual Behavior*. New York: Harpers. 307 pp.

Freedman, Lawrence Z. and Ferguson, Vera M.

1950 "The Question of 'Painless Childbirth' in Primitive Cultures," *American Journel of Orthopsychiatry*, Vol. 20, No. 2, pp. 363–372.

Fried, Morton

1952 "Land Tenure, Geography and Ecology in Contact of Cultures," *American Journal of Economics and Sociology*, Vol. 11, No. 4, July, pp. 391–412.

Goode, W. J.

1951 *Religion Among the Primitives*. Glencoe, Ill.: The Free Press. 321 pp.

Heizer, Robert F.

1953 "Aboriginal Fish Poisons," *Bureau of American Ethnology Bulletin No. 151*, pp. 225–283.

Herskovits, Melville J.

1952 *Economic Anthropology: A Study in Comparative Economics*. New York: Knopf. 551 pp.

Hoebel, Adamson E.

1954 *The Law of Primitive Man: A Study in Comparative Legal Dynamics*. Cambridge, Mass.: Harvard University Press. 357 pp.

James, E. O.
1952 "Religion and Reality," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXX, Pts. 1 & 2, pp. 25–36.

McClelland, D. C. and Friedman, G. A.
1952 "A Cross-Cultural Study of the Relationship between Child-Training Practices and Achievement Motivation Appearing in Folk-Tales," pp. 243–249 in Swanson, G. E.; Newcomb, T. M.; and Hartley, E. L. (eds.), *Readings in Social Psychology*. New York: Henry Holt & Co. 680 pp.

Meggers, Betty J.
1954 "Environmental Limitation on the Development of Culture," *American Anthropologist*, Vol. 56, No. 6, pp. 801–824.

Murdock, George P.
1950 "Family Stability in Non-European Cultures," *Annals of the American Academy of Political and Social Sciences*, Vol. 270, November, pp. 195–201.

Murdock, George P. and Whiting, John W. M.
1951 "Cultural Determination of Parental Attitudes: The Relationship between the Social Structure, Particularly Family Structure and Parental Behavior," pp. 13–34 in Senn, M. J. E. (ed.), *Problems of Infancy and Childhood* (Transactions of the Fourth Conference, March 6–7, 1950). New York: Josiah Macy, Jr. Foundation. 181 pp.

Paul, Benjamin D. (ed.)
1955 (In press) *Medicine and Social Science: A Casebook*. New York: Russell Sage Foundation.

Pitkin, Donald S.
1954 "Land Tenure and Family in an Italian Village" (Doctoral dissertation). Harvard University.

Queen, Stuart A. and Adams, John B.
1952 *The Family in Various Cultures*. Philadelphia: Lippincott. 280 pp.

Radin, Paul
1953 *The World of Primitive Man*. New York: Henry Schuman. 370 pp.

Redfield, Robert
1953 *The Primitive World and Its Transformations*. Ithaca: Cornell University Press. 185 pp.

Redfield, Robert and Singer, Milton
1954 "The Cultural Role of Cities," *Economic Development and Cultural Change*, Vol. 3, No. 1, pp. 53–73.

Spicer, Edward H. (ed.)
1952 *Human Problems in Technological Change: A Casebook*. New York: Russell Sage Foundation. 301 pp.

Stewart, Omer C.
1954 "The Forgotten Side of Ethnography," pp. 221–248 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology*. Minneapolis: University of Minnesota Press. 323 pp.

Velsen, J. Van
1951 "Delict in Primitive Law" (Doctoral dissertation). University of Oxford.

Whiting, Beatrice B.
1950 "A Cross Cultural Study of Sorcery and Social Control," pp. 82–91 in Whiting, Beatrice B., *Paiute Sorcery* (Viking Fund Publications in Anthropology, No. 15). New York: The Viking Fund, Inc. 110 pp.

Whiting, John M. and Child, Irving L.
1953 *Child Training and Personality: A Cross-Cultural Study*. New Haven: Yale University Press. Vol. 1, 353 pp.

Wright, G. O.
1952 "Projection and Displacement: A Cross-Cultural Study of the Expression of Aggression in Myths" (Doctoral dissertation). Harvard University.

Yap, M. A.
1951 "Mental Disease Peculiar to Certain Cultures: A Survey of Comparative Psychiatry," *Journal of Mental Science*, Vol. XCVII, No. 407, pp. 313–327.

COMPARISONS BETWEEN CONTINENTS OR NATIONS

Bascom, W. R.

1950 "The Focus of Cuban Santeria," *Southwestern Journal of Anthropology*, Vol. 6, No. 1, pp. 64–68.

1952 "Two Forms of Afro-Cuban Divination," pp. 169–179 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 2. Chicago: University of Chicago Press. 339 pp.

Bouteiller, Marcelle

1950 *Chamanisme et Guerison Magique*. Paris: Presses Universitaires. 337 pp.

Comas, Juan

1954 "Influencia Indigena en la Medicina Hipocratica, en la Nueva Espana del Siglo XVI," *America Indigena*, Vol. 14, No. 4, October, pp. 328–361.

Drews, R. A.

1952 "The Cultivation of Food Fish in China and Japan: a study disclosing contrasting national patterns for rearing fish consistent with the differing cultural histories of China and Japan" (Doctoral dissertation). University of Michigan.

Erasmus, Charles John

1950 "Patolli, Pachisi, and the Limitation of Possibilities," *Southwestern Journal of Anthropology*, Vol. 6, No. 4, pp. 369–387.

Firth, Raymond

1951 "Religious Belief and Personal Adjustment," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXVIII, Pts. 1 & 2, pp. 25–43.

Foster, George M.

1951 "Report on an Ethnological Reconnaissance of Spain," *American Anthropologist*, Vol. 53, No. 3, pp. 311–325.

1953 "*Cofradia* and *Compadrazgo* in Spain and Spanish America," *Southwestern Journal of Anthropology*, Vol. 9, No. 1, pp. 1–28.

Goldschmidt, Walter

1951 "Ethics and the Structure of Society. An Ethnological Contribution to the Sociology of Knowledge," *American Anthropologist*, Vol. 53, No. 4, Pt. 1, pp. 506–524.

Hatt, Gudmund

1951 "The Corn Mother in America and Indonesia," *Anthropos*, Vol. 46, pp. 853–914.

Hsu, Francis L. K.

1952 *Religion, Science and Human Crises: A Study on China in Transition and Its Implications for the West*. London: Routledge & Kegan Paul. 142 pp.

1953 *Americans and Chinese, Two Ways of Life*. New York: Henry Schuman. 457 pp.

Levy, Marion J., Jr.

1953 "Contrasting Factors in the Modernization of China and Japan," *Economic Development and Cultural Change*, Vol. II, No. 3, pp. 161–197.

Lewis, Oscar

1954 "Peasant Culture in India and Mexico: A Study in Contrasts," *Transactions of The New York Academy of Sciences*, Series II, Vol. 16, No. 4, pp. 219–223.

Mintz, Sidney W. and Wolf, Eric R.

1950 "An Analysis of Ritual Co-Parenthood *(Compadrazgo)*," *Southwestern Journal of Anthropology*, Vol. 6, No. 4, pp. 341–368.

Needham, Rodney

1954 "Siriono and Penan: A Test of Some Hypotheses," *Southwestern Journal of Anthropology*, Vol. 10, No. 2, pp. 228–232.

Patai, Ralph

1954 "Religion in Middle Eastern, Far Eastern and Western Culture," *Southwestern Journal of Anthropology*, Vol. 10, No. 3, pp. 233–254.

Steward, Julian H. and Murphy, Robert F.

1954 "The Mundurucu and the Algonkians: A Parallel in Processes of Acculturation," Paper given at Annual Meeting of the American Anthropological Association, December, 1954.

Weltfish, Gene

1952 "The Study of American Indian Crafts and Its Implication for Art Theory," pp. 200-209 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.

COMPARISONS WITHIN ONE CONTINENT

Armstrong, Robert C.

1952 "State Formation in Negro Africa" (Doctoral dissertation). University of Chicago.

Bacon, Elizabeth E.

1954 "Types of Pastoral Nomadism in Central and Southwest Asia," *Southwestern Journal of Anthropology*, Vol. 10, No. 1, Spring, pp. 44-65.

Barbeau, Marius

1952 "The Old-World Dragon in America," pp. 115-122 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.

Beals, Ralph L.

1952 "Social Stratification in Latin America," *American Journal of Sociology*, Vol. 58, No. 4, pp. 327-339.

Beattie, J. H. M.

1951 "Checks on the Abuse of Political Power: A Comparative Study of the Social Factors Acting in Restraint of the Abuse of Such Powers by Indigenous Political Authorities in Certain Native Societies of Africa" (Doctoral dissertation). University of Oxford.

Bekker, Konrad

1951 "Historical Patterns of Culture Contact in Southern Asia," *Far Eastern Quarterly*, Vol. XI, No. 1, pp. 3-15.

Collins, J. L.

1951 "Antiquity of the Pineapple in America," *Southwestern Journal of Anthropology*, Vol. 7, No. 2, pp. 145-155.

Eisenstadt, S. N.

1954 "African Age Groups, A Comparative Study," *Africa*, Vol. 24, No. 2, pp. 100-113.

Elmendorf, W. W.

1952 "Soul Loss Illness in Western North America," pp. 104-114 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.

Flannery, Regina

1952 "Two Concepts of Power," pp. 185-189 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.

Foster, George M.

1952 "Relationships between Theoretical and Applied Anthropology, a Public Health Program Analysis," *Human Organization*, Vol. 11, No. 3, Fall, pp. 5-16.

Gluckman, Max

1950 "Kinship and Marriage among the Lozi of Northern Rhodesia and the Zulu of Natal," pp. 166-206 in Radcliffe-Brown, A. R. and Forde, Daryll (eds.), *African Systems of Kinship and Marriage*. Oxford: Oxford University Press 399 pp.

Goldfrank, Esther S.

1952 "The Different Patterns of Blackfoot and Pueblo Adaptation to White Authority," pp. 78-79 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 2. Chicago: University of Chicago Press. 339 pp.

Kaplan, B.

1954 *A Study of Rorschach Responses in Four Cultures* (Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University, Vol. 42, No. 2). Cambridge, Mass. 44 pp.

Lange, Charles H.

1953 "A Reappraisal of Evidence of Plains Influences among the Rio Grande Pueblos," *Southwestern Journal of Anthropology*, Vol. 9, No. 1, pp. 212-230.

Lowie, Robert H.
1952 “The Heterogeneity of Marginal Cultures,” pp. 1–8 in Tax, Sol (ed.). *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.
Miller, Robert J.
1953 “Areas and Institutions in Eastern Asia,” *Southwestern Journal of Anthropology*, Vol. 9, No. 2, pp. 203–211.
Müller, A. R.
1951 “A Study of the Social Organization of Indian Tribes of South America” (Doctoral dissertation). University of Oxford.
Murdock, George Peter
1951 “South American Culture Areas,” *Southwestern Journal of Anthropology*, Vol. 7, No. 4, pp. 415–436.
Naroll, Raoul S.
1950 “A Draft Map of the Culture Areas of Asia,” *Southwestern Journal of Anthropology*, Vol. 6, No. 2, pp. 183–187.
Patai, Raphael
1951 “Nomadism: Middle Eastern and Central Asian,” *Southwestern Journal of Anthropology*, Vol. 7, No. 4, pp. 401–414.
Phillips, Arthur
1953 *Survey of African Marriage and Family Life*. New York: Oxford University Press. 462 pp.
Radcliffe-Brown, A. R. and Forde, Daryll (eds.)
1950 *African Systems of Kinship and Marriage*. New York: Oxford University Press. 399 pp.
Riley, Carroll L.
1952 “The Blowgun in the New World,” *Southwestern Journal of Anthropology*, Vol. 8, No. 3, pp. 297–319.
Rubio Orbe, Gonzalo
1953 “Aculturaciones de Indigenas de los Andes,” *America Indigena*, Vol. XIII, pp. 187–222.
Schuster, Carl
1952 “V-Shaped Chest-Markings: Distribution of a Design Motive in and around the Pacific,” *Anthropos*, Vol. 47, pp. 99–118.
Seligman, Brenda Z.
1950 “The Problem of Incest and Exogamy: A Restatement,” *American Anthropologist*, Vol. 52, No. 3, pp. 305–316.
Smith, Marian W.
1951 “American Indian Warfare,” *Transactions of The New York Academy of Sciences*, Series II, Vol. 13, No. 8, pp. 348–364.
Spinden, Herbert J.
1952 “Power Animals in American Indian Art,” pp. 195–199 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.
Tegnaeus, Harry
1952 *Blood Brotherhood: An Ethno-Sociological Study of the Institution of Blood-Brotherhood with Special Reference to Africa*. New York: Philosophical Library. 181 pp.
Wolf, Eric
1955 (In press) “Types of Latin American Peasantry: A Preliminary Discussion,” *American Anthropologist*, Vol. 57.

COMPARISONS WITHIN ONE NATION

Beltran, Gonzalo Aguirre
1952 “El Gobierno Indigena en México y el Proceso de Aculturación,” *America Indigena*, Vol. XII, No. 4, October, pp. 271–297.
Carrasco, Pedro
1951 “Las Culturas Indigenas de Oaxaca, México,” *America Indigena*, Vol. XI, No. 2, April, pp. 99–114.

Caudill, William

1952 *Japanese-American Personality and Acculturation* (Genetic Psychology Monographs, Vol. 45). Provincetown, Mass.: Journal Press. 102 pp.

Du Wors, Richard E.

1952 "Persistence and Change in Local Values of Two New England Communities," *Rural Sociology*, Vol. 17, No. 3, September, pp. 207–217.

Erasmus, Charles John

1952 "Changing Folk Beliefs and the Relativity of Empirical Knowledge," *Southwestern Journal of Anthropology*, Vol. 8, No. 4, pp. 411–427.

Francis, E. K.

1952 "The Adjustment of a Peasant Group to a Capitalistic Economy: The Manitoba Mennonites," *Rural Sociology*, Vol. 17, No. 3, September, pp. 218–228.

Fried, Morton H.

1952 "Chinese Society: Class as Sub-culture," *Transactions of The New York Academy of Sciences*, Series II, Vol. 14, No. 8, pp. 331–336.

Landman, Ruth

1954 "Mexican Acculturation, Compared with Jewish and Japanese Immigrant Acculturation." Paper given at the Annual Meeting of the American Anthropological Association, December, 1954.

Manners, Robert A. and Steward, Julian H.

1953 "The Cultural Study of Contemporary Societies: Puerto Rico," *American Journal of Sociology*, Vol. 59, No. 2, pp. 123–130.

Mukherjee, R. K. and Girling, F. K.

1950 "Breton Family and Economic Structure," *Rural Sociology*, Vol. 15, No. 1, March, pp. 49–62.

Olmstead, David L.

1951 "Two Korean Villages: Culture Contact on the 39th Parallel," *Human Organization*, Vol. 10, No. 3, pp. 33–36.

Opler, Marvin K.

1950 "Two Japanese Religious Sects," *Southwestern Journal of Anthropology*, Vol. 6, No. 1, pp. 69–78.

Opler, Morris E. and Singh, Rudra Dott

1952 "Two Villages of Eastern Uttar Pradesh (U.P.), India: An Analysis of Similarities and Differences," *American Anthropologist*, Vol. 54, No. 2, Pt. 1, pp. 179–191.

Painter, Norman W. and Morrison, Paul C.

1952 "Rural Population Stability, Central District of Turrialla Canton, Costa Rica," *Rural Sociology*, Vol. 17, No. 4, December, pp. 356–366.

Patai, Raphael

1953 *Israel Between East and West: A Study in Human Relations*. Philadelphia: The Jewish Publication Society. 348 pp.

Paterson, T. T. and Willet, F. J.

1951 "An Anthropological Experiment in a British Colliery," *Human Organization*, Vol. 10, No. 2, pp. 19–25.

Pedersen, Harold A.

1951 "Cultural Differences in the Acceptance of Recommended Practises," *Rural Sociology*, Vol. 16, No. 1, March, pp. 37–49.

Raper, Arthur F.

1951 "Some Recent Changes in Japanese Village Life," *Rural Sociology*, Vol. 16, No. 1, March, pp. 3–16.

Rooksby, R. L.

1951 "Ritual and Society in Selected South Indian Societies" (Doctoral dissertation). University of Oxford.

Ryan, Bruce

1950 "Socio-Cultural Regions of Ceylon," *Rural Sociology*, Vol. 15, No. 1, March, pp. 3–18.

1952 "The Ceylonese Village and the New Value System," *Rural Sociology*, Vol. 17, No. 1, March, pp. 9–28.

SANDERS, IRWIN T.
1953 "Village Social Organization in Greece," *Rural Sociology*, Vol. 18, No. 4, December, pp. 366–375.

STEWARD, JULIAN H. and collaborators
1955 *The People of Puerto Rico*. Urbana: University of Illinois Press.

TAYLOR, GORDON D.
1953 "Some Crop Distributions by Tribes in Upland Southeast Asia," *Southwestern Journal of Anthropology*, Vol. 9, No. 3, pp. 296–308.

VAN DER KROEF, JUSTUS M.
1954 "Disorganization and Social Change in Rural Indonesia," *Rural Sociology*, Vol. 19, No. 2, June, pp. 161–173.

VAZQUEZ-CALCERRADA, P. B.
1953 "A Research Project on Rural Communities in Puerto Rico," *Rural Sociology*, Vol. 18, No. 3, September, pp. 221–233.

VIQUEIRA, CARMEN and PALERM, ANGEL
1954 "Alcoholismo, Brujeria y Homocidio en dos Comunidades Rurales de México," *America Indigena*, Vol. 14, No. 1, January, pp. 7–36.

VOGT, EVON Z. and O'DEA, THOMAS F.
1953 "A Comparative Study of the Role of Values in Social Action in Two Southwestern Communities," *American Sociological Review*, Vol. 18, No. 6, pp. 645–654.

WAGLEY, CHARLES
1952 *Race and Class in Rural Brazil*. New York: Columbia University Press. 160 pp.

WOLF, KATHLEEN L.
1952 "Growing Up and Its Price in Three Puerto Rican Subcultures," *Psychiatry*, Vol. 15, No. 4, pp. 401–433.

ZEN SUN, E-TU
1952 "Results of Culture Contact in Two Mongol-Chinese Communities," *Southwestern Journal of Anthropology*, Vol. 8, No. 2, pp. 182–210.

COMPARISONS WITHIN A SINGLE CULTURE AREA OR REGION

BAILEY, F. G.
1951 "The Political Organization of the Plains Indians" (Doctoral dissertation). University of Oxford.

BELLAH, ROBERT N.
1952 *Apache Kinship Systems*. Cambridge, Mass.: Harvard University Press. 151 pp.

BERNARDI, B.
1952 "The Age-System of the Nilo-Hamitic Peoples," *Africa*, Vol. 22, No. 4, pp. 316–332.

BERNDT, RONALD M.
1951 "Ceremonial Exchange in Western Arnhem Land," *Southwestern Journal of Anthropology*, Vol. 7, No. 2, pp. 156–175.

BROKENSHA, D. W.
1951 "The Political Institutions of Some Southern Nguni Tribes" (Doctoral dissertation). University of Oxford.

BROWN, P. S.
1950 "A Study in Authority in Indigenous West African Societies" (Doctoral dissertation). University of London.

BURRIDGE, K. O. L.
1951 "Aspects of Rank in Melanesia" (Doctoral dissertation). University of Oxford.

BUTT, A. J.
1951 "The Social Organization of the Central and Eastern Eskimo" (Doctoral dissertation). University of Oxford.

CAMARA, FERNANDO
1951 "Religious and Political Organization," pp. 142–164 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

DE LA FUENTE, JULIO
1952 "Ethnic and Communal Relations," pp. 76–94 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

DRUCKER, PHILIP

1951 *The Northern and Central Nootka Tribes* (Bureau of American Ethnology Bulletin 144). Washington, D. C.: Smithsonian Institution. 480 pp.

EGGAN, FRED

1950 *Social Organization of the Western Pueblos.* Chicago: University of Chicago Press. 373 pp.

ELKIN, A. P.

1950 "The Complexity of Social Organization in Arnhem Land," *Southwestern Journal of Anthropology*, Vol. VI, No. 1, pp. 1–20.

1953 *Social Anthropology in Melanesia.* London: Oxford University Press. 166 pp.

ELLIS, FLORENCE HAWLEY

1951 "Patterns of Aggression and the War Cult in Southwestern Pueblos," *Southwestern Journal of Anthropology*, Vol. VII, No. 2, pp. 177–201.

ESTERMANN, C.

1952 "Clans et alliances entre clans dans le sudouest de l'angola," *Anthropos*, Vol. 47, pp. 587–606.

EVANS-PRITCHARD, E. E.

1952 "Nilotic Studies," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXX, Pts. 1 & 2, pp. 1–6.

FALLERS, L. A.

1953 "Bantu Bureaucracy: A Study of Role Conflict and Institutional Change in the Soga Political System" (Doctoral dissertation). University of Chicago.

FISCHER, H. T.

1950 "The Concept of Incest in Sumatra," *American Anthropologist*, Vol. 52, No. 2, pp. 219–224.

GARIGUE, PHILIP

1954 "Changing Political Leadership in West Africa," *Africa*, Vol. 24, No. 3, pp. 220–232.

GIBSON, GORDON D.

1952 "The Social Organization of the Southwestern Bantu" (Doctoral dissertation). University of Chicago.

GILLIN, JOHN

1952 "Ethos and Cultural Aspects of Personality," pp. 193–212 in Tax, Sol (ed.), *Heritage of Conquest.* Glencoe, Ill.: The Free Press. 312 pp.

GOLDMAN, IRVING

1955 (In press) "Status Rivalry and Cultural Evolution in Polynesia," *American Anthropologist*, Vol. 57.

GUIART, JEAN

1951 "Forerunners of Melanesian Nationalism," *Oceania*, Vol. 22, No. 2, pp. 81–90.

GUITERAS HOLMES, CALIXTA

1952 "Social Organization," pp. 97–108 in Tax, Sol (ed.), *Heritage of Conquest.* Glencoe, Ill.: The Free Press. 312 pp.

HAWLEY, FLORENCE

1950 "Big Kivas, Little Kivas, and Moiety Houses in Historical Reconstruction," *Southwestern Journal of Anthropology*, Vol. 6, No. 3, pp. 286–302.

HOGBIN, H. IAN and WEDGEWOOD, CAMILLA H.

1953 "Local Grouping in Melanesia," *Oceania*, Vol. 23, No. 4, pp. 241–276; Vol. 24, No. 1, pp. 58–76.

HOLAS, B. and DEKEYSER, P. L.

1952 *Mission dans l'est Liberien* (Memoires de l'Institut Français d'Afrique Noire, No. 14). Dakar. 566 pp.

HONIGMANN, JOHN J.

1952 "Intercultural Relations at Great Whale River," *American Anthropologist*, Vol. 54, No. 4, pp. 510–522.

HOWELL, P. P.

1950 "A Comparative Study of Customary Law Among Cattle-Owning Tribes of the Southern Sudan (Doctoral dissertation). University of Oxford.

James, Alice
1950 "Village Arrangement and Social Organization Among Some Amazon Tribes" (Doctoral dissertation). Columbia University.

Keesing, Felix M.
1953 *Social Anthropology in Polynesia; A Review of Research*. London: Oxford University Press. 126 pp.

Kirchhoff, Paul
1952 "Meso-America," pp. 17–30 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.
1954 "Gatherers and Farmers in the Greater Southwest: A Problem in Classification," *American Anthropologist*, Vol. 56, No. 4, Pt. 1, pp. 529–560.

Kluckhohn, Clyde
1954 "Southwestern Studies of Culture and Personality," *American Anthropologist*, Vol. 56, No. 4, Pt. 1, pp. 685–697.

Kurath, Gertrude P.
1952 "Dance Acculturation," pp. 233–242 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

Lane, Barbara S.
1953 "A Comparative and Analytic Study of Some Aspects of Northwest Coast Religion" (Doctoral dissertation). University of Washington.

Leach, E. R.
1954 *Political Systems of Highland Burma*. Cambridge, Mass.: Harvard University Press. 323 pp.

Leacock, Eleanor
1954 *The Montagnais Hunting Territory and the Fur Trade* (Memoir 78, American Anthropological Association). 59 pp.

Lemert, Edwin M.
1952 "Stuttering Among the North Pacific Coastal Indians," *Southwestern Journal of Anthropology*, Vol. 8, No. 3, pp. 420–441.
1954 *Alcohol and the Northwest Coast Indians* (University of California Publications in Culture and Society, Vol. 2, No. 6). Berkeley: University of California Press. 103 pp.

Lévi-Strauss, Claude
1952a "Kinship Systems of Three Chittagong Hill Tribes (Pakistan)," *Southwestern Journal of Anthropology*, Vol. 8, No. 1, pp. 40–51.
1952b "Les Structures Sociales dans le Brésil Central et Orientales," pp. 302–310 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 410 pp.

Lystad, R. A.
1951 "Differential Acculturation of the Ahafo-Ashanti of the Gold Coast and the Indenie-Agni of the Ivory Coast" (Doctoral dissertation). Northwestern University.

Mason, J. Alden
1952 "Notes and Observations on the Tepehnan," *America Indigena*, Vol. 12, No. 1, January, pp. 33–53.

McConnell, Ursula H.
1950 "Junior Marriage Systems: A Comparative Survey," *Oceania*, Vol. 21, No. 2, pp. 107–143.

Nadel, S. F.
1950 "Dual Descent in the Nuba Hills," pp. 333–359 in Radcliffe-Brown, A. R. and Forde, Daryll (eds.), *African Systems of Kinship and Marriage*. New York: Oxford University Press. 399 pp.
1952 "Witchcraft in Four African Societies. An Essay in Comparison," *American Anthropologist*, Vol. 54, No. 1, pp. 18–29.

Newcomb, W. W.
1950 "A Re-examination of the Causes of Plains Warfare," *American Anthropologist*, Vol. 52, No. 3, pp. 317–330.

Paul, Benjamin D. and Paul, Lois
1952 "The Life Cycle," pp. 174–192 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

PETTERSSON, OLOF

1953 *Chiefs and Gods: Religious and Social Elements in South Eastern Bantu Kinship* (Studia Theologia Lundensia, No. 3). Lund: C. W. K. Glerrup. 405 pp.

POCOCK, D. F.

1951 "A Comparative Study of Social Organization Among the Nilotic People" (Doctoral dissertation). University of Oxford.

READ, K. E.

1954 "Cultures of the Central Highlands, New Guinea," *Southwestern Journal of Anthropology*, Vol. 10, No. 1, pp. 1–43.

RICHARDS, A. I.

1950 "Some Types of Family Structure Amongst the Central Bantu," pp. 207–251 in Radcliffe-Brown, A. R. and Forde, Daryll (eds.), *African Systems of Kinship and Marriage*. New York: Oxford University Press. 399 pp.

RIESENBERG, SAUL H. and GAYTON, A. H.

1952 "Caroline Island Belt Weaving," *Southwestern Journal of Anthropology*, Vol. 8, No. 3, pp. 342–375.

RIESENFELD, A.

1951 "Tobacco in New Guinea and other Areas of Melanesia," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXXI, Pts. 1 & 2, pp. 69–103.

SAUER, JONATHAN D.

1950 "Amaranths as Dye Plants Among the Pueblo Peoples," *Southwestern Journal of Anthropology*, Vol. 6, No. 4, pp. 412–415.

SECOY, FRANK RAYMOND

1953 *Changing Military Patterns on the Great Plains* (*Monographs of the American Ethnological Society*, Vol. 21). New York: J. J. Augustin. 112 pp.

SMITH, MARIAN W.

1952 "Culture Area and Culture Depth: With Data from the Northwest Coast," pp. 80–96 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. 410 pp.

SMITH, M. G.

1953 "Secondary Marriage in Northern Nigeria," *Africa*, Vol. 23, No. 4, pp. 298–323.

STARR, BETTY W.

1954 "Levels of Communal Relations," *American Journal of Sociology*, Vol. 60, No. 2, September, pp. 125–135.

STEVENSON, H. N. C.

1951 "Religion and Society Among Some Tribes of Chota-Nagpur (Doctoral dissertation). University of Oxford.

SUTTLES, WAYNE

1951 "The Early Distribution of the Potato Among the Coast Salish," *Southwestern Journal of Anthropology*, Vol. 7, No. 3, pp. 272–288.

TAX, SOL

1952a "Economy and Technology," pp. 43–75 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

1952b "The Sixteenth Century and the Twentieth," pp. 262–281 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

THOMPSON, LAURA

1951 *Personality and Government: Findings and Recommendations of the Indian Administration Research*. Mexico, D.F.: Instituto Indigenista Inter-Americano. 229 pp.

UNDERHILL, RUTH

1954 "Intercultural Relations in the Greater Southwest," *American Anthropologist*, Vol. 56, No. 4, pp. 645–662.

VAN DER KROEF, JUSTUS M.

1952 "Some Head-Hunting Traditions of Southern New Guinea," *American Anthropologist*, Vol. 54, No. 2, Pt. 1, pp. 221–235.

WAGLEY, CHARLES

1951 "Cultural Influences on Population: A Comparison of Two Tupi Tribes," *Revista do Museu Paulista*, Vol. 5 *n.s.*, pp. 95–104.

WISDOM, CHARLES
1952 "The Supernatural World and Curing," pp. 119–134 in Tax, Sol (ed.), *Heritage of Conquest*. Glencoe, Ill.: The Free Press. 312 pp.

COMPARISONS WITHIN A SINGLE LOCAL GROUP OR CULTURE

BARNES, J. A.
1951 "Measures of Divorce Frequency in Simple Societies," *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXIX, Pts. 1 & 2, pp. 37–62.

BARNOUW, VICTOR
1950 *Acculturation and Personality Among the Wisconsin Chippewa* (Memoir 70, American Anthropological Association). 152 pp.
1954 "The Changing Character of a Hindu Festival," *American Anthropologist*, Vol. 56, No. 1, pp. 74–86.

BASCOM, WILLIAM R.
1950 "Ponape: The Cycle of Empire," *Scientific Monthly*, Vol. LXX, No. 3, pp. 141–150.

COLSON, ELIZABETH
1954 "The Intensive Study of Small Sample Communities," pp. 43–59 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology*. Minneapolis: University of Minnesota Press. 323 pp.

FENTON, WILLIAM N. (ed.)
1951 *Symposium on Local Diversity in Iroquois Culture* (Bureau of American Ethnology, Bulletin No. 149). Washington, D. C.: Smithsonian Institution. 187 pp.

FIRTH, RAYMOND
1952 "Notes on the Social Structure of Some South-Eastern New Guinea Communities," *Man*, Vol. 52, No. 5, pp. 65–67; No. 6, pp. 86–89.

FRIED, JACOB
1953 "The Relation of Ideal Norms to Actual Behavior in Tarahumara Society," *Southwestern Journal of Anthropology*, Vol. 9, No. 3, pp. 286–295.

GOLDSCHMIDT, WALTER and SPINDLER, GEORGE
1952 "Experimental Design in the Study of Culture Change," *Southwestern Journal of Anthropology*, Vol. 8, No. 1, pp. 68–83.

HALLOWELL, A. IRVING
1950 "Values, Acculturation and Mental Health," *American Journal of Orthopsychiatry*, Vol. 20, No. 4, pp. 732–743.
1952 "Ojibway Personality and Acculturation," pp. 106–112 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 2. Chicago: University of Chicago Press. 339 pp.

HART, C. W. M.
1954 "The Sons of Turimpi," *American Anthropologist*, Vol. 56, No. 2, Pt. 1, pp. 242–261.

HENRY, JULES
1951 "The Economics of Pilaga Food Production," *American Anthropologist*, Vol. 53, No. 2, pp. 187–219.

HOGBIN, IAN
1951 *Transformation Scene: The Changing Culture of a New Guinea Village*. London: Routledge and Kegan, Paul. 326 pp.

KAPLAN, BERNICE A.
1951 "Changing Functions of the Huanancha Dance at the Corpus Christi Festival in Paracho, Michoacán, México," *Journal of American Folklore*, Vol. 64, No. 254, pp. 383–396.

LEWIS, OSCAR
1950 "An Anthropological Approach to Family Studies," *The American Journal of Sociology*, Vol. LV, No. 5, pp. 468–475.
1951 *Life in a Mexican Village: Tepoztlán Restudied*. Urbana: University of Illinois Press. 512 pp.

MANDELBAUM, DAVID G.
1954 "Form, Variation and Meaning of a Ceremony," pp. 60–102 in Spencer, Robert F. (ed.), *Method and Perspective in Anthropology*. Minneapolis, University of Minnesota Press. 323 pp.

Marriott, McKim

1952 "Social Change in an Indian Village," *Economic Development and Cultural Change*, No. 2, June, pp. 145–155.

Mead, Margaret

1954 "Manus Restudied: An Interim Report," *Transactions of The New York Academy of Sciences*, Ser. II, Vol. 16, No. 8, pp. 426–432.

Nett, Betty R.

1952 "Historical Changes in the Osage Kinship System," *Southwestern Journal of Anthropology*, Vol. 8, No. 2, pp. 164–181.

Redfield, Robert

1950 *A Village that Chose Progress: Chan Kom Revisited.* Chicago: University of Chicago Press. 187 pp.

Reichel-Dolmatoff, Gerardo

1953 "Actitudes hacia el Trabajo en una Población Mestiza de Colombia," *America Indigena*, Vol. XIII, No. 3, July, pp. 165–174.

Roberts, John M.

1951 *Three Navaho Households* (Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 40, No. 3). Cambridge, Mass. 84 pp.

Schmidt, Karl and Schmidt, Osanai Iva

1952 *Wichita Kinship, Past and Present.* Norman, Okla.: University Book Exchange. 72 pp.

Spindler, George D.

1952 "Personality and Peyotism in Menomini Indian Acculturation," *Psychiatry*, Vol. 15, No. 2, pp. 151–159.

Stout, D. B.

1952 "Persistent Elements in San Blas Cuna Social Organization," pp. 262–265 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 3. Chicago: University of Chicago Press. 339 pp.

Tremblay, Marc-Adelard; Collier, John, Jr.; and Sasaki, Tom T.

1954 "Navaho Housing in Transition," *American Indigena*, Vol. 14, No. 3, pp. 187–220.

Tumin, Melvin M.

1952 *Caste in a Peasant Society: A Case Study in the Dynamics of Caste.* Princeton: Princeton University Press. 300 pp.

Wallace, Ernest and Hoebel, E. Adamson

1952 *The Comanches, Lords of the South Plains* (Civilization of the American Indian Series, No. 34). Norman, Okla.: University of Oklahoma Press. 381 pp.

Watson, James B.

1952 *Cayuá Culture Change: A Study in Acculturation and Methodology* (Memoir 73, American Anthropological Association). 144 pp.

Voget, Fred

1952 "Crow Socio-Cultural Groups," pp. 88–93 in Tax, Sol (ed.), *Selected Papers of the XXIXth International Congress of Americanists*, Vol. 2. Chicago: University of Chicago Press. 339 pp.

Vogt, Evon Z.

1951 *Navaho Veterans, A Study of Changing Values* (Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. 41, No. 1). Cambridge, Mass. 223 pp.

History of Anthropological Thought

A. L. KROEBER

Emeritus Professor of Anthropology at the University of California, Berkeley, Dr. Kroeber, at the time of writing was visiting Professor of Anthropology at Brandeis University, Waltham, Massachusetts. He was 1945 Huxley Memorial Medalist, 1946 Viking Fund Medalist in General Anthropology, and Chairman of the Wenner-Gren Foundation's 1952 International Symposium on Anthropology. His principal volumes are Configurations of Culture Growth, 1944; Anthropology, 1948; and The Nature of Culture, 1952.

COLLECTIVE thought tends to move ponderously, and 1952–1954 is a short period. The roots of the thinking that has reached a new stage, or has come into focus in these three short years, almost always reach back a decade or more. It will sometimes be necessary to follow them back to their beginnings; but I have tried to give special attention to those phases that have warmed to recent radiance or that suggest an impending burst of development.

As such I construe an important rapprochement of biological and cultural study, with which I commence. The well established old-line subjects of ethnology, archeology, and biological anthropology have progressed expectably and steadily rather than being upset by any re-routing of highways and overnight settlements, so that they require little comment in the present short-term review. But I have included some novel items in linguistic and culture history. Then follows another brief section on general theory and methods; after which attention shifts first to the still formative subject of values and finally and at greatest length to the fringe subjects, beginning with personality, which have invaded anthropology from neighboring social science rather than developing autonomously from its older native roots.

If I say nothing about acculturation, it is because I find no novelties there. In fact it seems that there is some tendency for the focus to shift back toward the assimilation which was originally so strong in the subject. The native nationalities or immigrant minorities involved are numerous, but the outcome is pretty uniform: absorption into the rural or urban proletariat; it is chiefly the rate and details that vary. I do not know why these monotonous studies continue to be made except that budding anthropologists have firmly—and perhaps soundly—got it into their heads that the anthropologist's hall-mark is the fact of having made a face-to-face study of living people. So they will do a community-study at all costs even if they have to invent some "hypothesis" to hang it on to, and without worrying too much whether it contributes any new ideas. And I suppose that, as regards having had the experience, they are right. As to whether I am right in seeing no essentially new ideas in this stream of output, I am of course not the one to affirm. But if I am wrong, citations of evidence will be easy.[1]

---

[1] The report of the Social Science Research Council's 1953 Summer Seminar on Acculturation has appeared in the December 1954 number of the *American Anthropologist* since the above was written.

BIOLOGICAL RELATIONS

A development in biology that is of definite pertinence to anthropology has been the increasing filling-out and enrichment of findings and understanding of organic evolution, as the precondition of cultural growth. This neo-evolutionistic movement must be distinguished from the early or first-half-century pulse of Darwinian evolution, in which a broad theoretic-polemical element still predominated, adaptation was fully recognized, but heredity and variation remained vague and fluid. In the opinion of many biologists, this older doctrine of evolution after a time almost suffered shipwreck; but once the new science of genetics hit its stride two decades or so after the turn of the century, and began to realize its potential, a rapprochement was effected, between it and evolutionary biology, which grew more intimate and drew in many other lines of biological research, from cytology and ecology to paleontology and taxonomy. For the non-biologist, the spearhead of exposition of this great forward lunge is to be found in the writings of Julian Huxley, as exemplified for instance in *Evolution the Modern Synthesis*, 1942; *Evolution in Action*, 1953, and, with coeditors, *Evolution as a Process*, 1954. To these books must be added a paper written for the Columbia Bicentennial and to be published early in 1955, on "Man's Place and Role in Nature," in which Huxley elaborates his basic position as less formally presented in 1951 at a Wenner-Gren Foundation supper-conference.

In these late works, Huxley passes on from biological to psychosocial or cultural or "noetic" evolution, which is limited to man, operates by different mechanisms, but has already proceeded to a point where it potentially dominates the sphere of life and presumably can direct it hereafter. At any rate, he holds that no fundamental improvements in merely biological level and efficiency any longer seem likely or even possible. Huxley realizes fully that a critical point was passed when a method of transmission and transformation of tradition was evolved by our early human ancestors.

The significance of this view is that it completely departs from the position of biologists a generation or two ago, when they either largely ignored culture or saw in it a sort of secondary modification or extension or epiphenomenon of biology, and racism and eugenics had vogue. Huxley fully accepts that noetic or cultural activity proceeds on a separate level which is relatively new, is autonomous, and which, in contrast with organic evolution, still possesses untouched potentialities. He goes on to consider "noetic integrators" of possible future cultural development which are of a scope to dwarf as miniature any plans yet envisaged by applied anthropologists.

In any event, we have a new through-highway bridge-building between biology and the psychology-anthropology-humanities inquiries which deal with culture; and it is gratifying, and an assurance of permanence of the new connection, that this pushing out forward has come mainly from biology. Reciprocating efforts are naturally called for, and the beginnings of these are visible in several directions. Such are increased emphasis on the particular basis in biology which preconditions culture, on the nature of our ancient and seemingly deathless friend "human nature," and on the problem of "progress" or whatever we may wish to name the counterpart of "direction" in biological level.

The first of these possibilities is exemplified by Weston LaBarre's recent book *The Human Animal*, 1954. The initial half-dozen chapters of this, with fervid conviction and real eloquence, deal with "the human animal" in the most literal sense of the phrase—at more length and with greater concentration than a somewhat corresponding chapter on "Man's Place in Nature" (the title consciously borrowed from Thomas Henry Huxley) in Kroeber's 1948 *Anthropology*. Two others of LaBarre's chapters (8 and 9) portray not only the limitations, but also the genuine significance of human race, genetics, and domestication—this last term used outright, without qualification by the prefix "self." Their special importance is in moving in the direction of maintaining "physical" anthropology in rapport with "cultural." The thirteenth chapter develops the thesis that a psychosis and a culture differ only quantitatively—one being individual, the other social. Throughout, the volume remains true to its title in viewing culture as something unique developed *in* an animal.

HUMAN NATURE

Human nature, or "the natural," also once known as the "psychic unity of mankind," into which so many nineteenth-century anthropologists dipped to draw up inspirational buckets of speculation, was thereafter long shunned as an unknown and unknowable, but is once more being nibbled at. It was the subject of a symposium at the 1952 national meeting of the American Anthropological Association, from which at least one paper has appeared, by Spiro (1953) on "Human Nature in its Psychological Dimensions." One point Spiro develops probably will be generally accepted, that the distinction formerly often made, between man's innate "basic" drives and his socially acquired ones, cannot properly be maintained, or at least is fruitless. However, when Spiro finds that because acquired drives are as "natural" to man as his biological ones they therefore constitute another psychic dimension of his unique nature, this appears to be essentially a restatement of man's unique symbolizing capacity rather than another distinct "dimension." Spiro's final conclusion that it is personality that constitutes human nature seems again to reduce to, or at least derive from, faculty for symbolization; if there is more than that in the conclusion, it eludes me—perhaps from the compression of the article. Spiro sees needs, values, ego processes, and defense mechanisms as prerequisites of culture. As a universal need he cites a world view. I would see a world view as part of culture itself. If a world view is universal in cultures we may infer that it springs from a corresponding psychological need, but I cannot see that such an inference adds anything that is more than verbal. We do know a good deal that is specific about world views, but the need remains quite vague. Similarly for values; are they not definitely again *in* culture? That there is "an imperative dimension in human behavior" is true enough; but to the individual his value imperatives come mainly from his culture, and the culture has them because human beings symbolize.

I have ready for publication an article which tries to reopen the problem of human nature without recourse to personality, but by a double approach from biological behavior and back from cultural manifestations without reference to the enumerative "universal pattern." The proposal is to review and reinterpret the nearest subhuman approaches to what man does in and through culture, and to plot the perimeters or extremities of total known culture as an indication of how far human nature can go, or at least has gone, and therefrom infer its area and "content." What this approach may yield remains to be seen; but at least it is offered as a counter balance to the approach through personality, which seems to me much more likely to be the product of human nature plus culture, than its prerequisite or basis.

We may expect increased attention to this subject in the coming years. After all we can hardly forever leave the psychic equipment of man a blank except for a few reflexes, no instincts, and a faculty for symbolization; at least not without a try.

As to progress in culture, Huxley accepts it as unhesitatingly as he accepts progress in living matter; and Redfield (1953) agrees in *The Primitive World and Its Transformations* (especially chapter 6). Redfield (1953, p. 159) finds that when anthropologists threw out the nineteenth-century bath water of "progress" as a mere assumption of faith, they also threw out a tangible baby of undeniable progress, and threw it far enough for its cry not to reach their ears.

It is by now clear that Redfield is right; the problem is not whether there is progress, but of what it consists and what has been its precise if fluctuating route. We can admit progress and still remain whole-hearted, non-weaseling cultural relativists. To become aware of ethnocentrism is to begin to discount it intellectually. We do not have to flop from the absolutism of ethnocentricity to the equally absolute paralysis of relativism blown up into a total negation. Genuine relativism is a safeguard against ethnocentrism, not an indiscriminate enshrinement of all values as untouchably sacrosanct. If values are to be dealt with in culture study—as it is pleasant to note that Huxley (1953, p. 150) takes for granted—they have to be characterized, defined, "weighed" to be compared; and it is of their nature that "measurement" of them, at least at first and possibly always, will be more effective qualitatively than quantitatively. If that means that value judgments can not be wholly kept out of organized value study, so be it: better to err a little than to renounce all understanding for a taboo. We are not physicists. And is it not time to realize that for students of culture to fear that *they* may lapse into ethnocentricity is almost as belatedly pedantic as it would be for chemists to be on their guard against becoming Rosicrucianly anthropomorphic?

TIME DEPTHS AND BASIC TYPES OF LANGUAGES

In linguistics there are two developments to chronicle, both of definite interest to cultural anthropologists in their results, and both using quantitative expression.

The first is Swadesh's glottochronological method, which is simple in principle, being lexical comparison, though sound and exact data are needed and judgments must be critical. To this comparison there is brought a hypothetical assumption that the rate of inner or automatic change of all languages tends to be closely similar. There is some preliminary evidence from languages with known history that this assumption is approximately correct. Basing from these cases, Swadesh converts percentages of remaining similarity of vocabularies into centuries elapsed since separation of two languages, with results running up into millennia and on the whole conforming to extant impressions as to classification of language groups. The strict constancy of rate of change remains unproved; but it can be disproved or corrected only by testing more cases, so that further prosecution of the method is urgently desirable, whether one's faith in it be positive or negative. Mine is definitely affirmative, on the basis of internal consistency of results within groups universally accepted as related; but as a full weighing of evidence is lengthy, I refer to an article on the subject I have in press in *International Journal of American Linguistics*. Swadesh's method bids fair to rival dendrochronology and carbon 14 as a time indicator. Ranges above 8000 still seem uncertain, but from 2000 to 5000 years fairly precise determinations appear reliably attainable if not already in hand.

Greenberg (1954) has reviewed the old problem of types of language, which took shape with normative and ethnocentric classifications by nineteenth-century German idealists from Schlegel to Schleicher and Max Mueller ("agglutinative, isolating, inflectional"), and which since then has lain fallow except for Sapir's 1921 morphological classification, which some anthropologists have shown an interest in, but nearly all linguists have tended to walk around. Greenberg sets up ten morphological indices, these expressing scale-frequencies of occurrence of the structural features of synthesis, agglutination, compounding, derivation, gross inflection, prefixing, suffixing, isolation, pure inflection, and concord in eight selected languages. The statistical results check very interestingly against the relationships and what is known of changes in the languages. Four of the eight languages are pairs of earlier and later stages in two Indo-European lineages: Anglo-Saxon and English, Sanskrit and modern Persian. Both definitely go down in "synthesis"—from 2.12 to 1.08 and from 2.59 to 1.59—up in agglutination, and run similarly parallel in seven of the eight other traits. Annamese, the one "isolating" language of the eight, comes out extreme in nearly all indices: lowest seven times, highest once: it seems to stand at one end of the total range of structural possibilities. Eskimo, on the contrary, scores four maxima and four minima in ten features, which suggests strong characterization in different morphological directions. Bantu stands second in this regard. But the four Indo-European languages rate highest or lowest only twice in 20 times as against a chance probability of 10 in 20. They thus seem generalized rather than specialized in structure. These samples show the interest which results from the method promise to have. The construction of the indices and application of data to them can no doubt be improved with more experience, but seem simple, practical, and inspire faith. Linguists, in virtue of being perfectionists by profession, will presumably shake their heads and pick flaws for a time. But it looks as if Greenberg has set up a milestone—and one of an interest to non-linguists comparable to Whorf's metalinguistic essays but more open to proof.

CULTURE HISTORY

A line of thought related to the Tönnies community-society distinction (Gemeinschaft versus Gesellschaft) began to be worked on by Redfield as far back as the Tepoztlán days (tontos and correctos) and was later (1941–1947) developed by him into a folk-sophisticate and folk-urban polarity or continuum. In his 1953 volume, *The Primitive World and Its Transformations*, he elasticizes the idea by adding the peasant as a "human type." The influence of Childe's vast material and restated interpretations is evident in this increment. Perhaps also there was a reaction to Sjoberg's attempt (1952) to inject the not wholly apropos concept of a "feudal" type. To Redfield (1953, p. 31 and chapter 2) a peasantry is brought into existence by the city. Peasants are long-indigenous rural natives whose order of life takes important account of the city—economically, politically, and morally. They are part of a larger society, religion, and state, use its money, are affected by its writing and law. The concept of course is old in common knowledge and in history, especially in long-settled stable regions such as Europe and China, but has been rather outside the experience of most Americans, and our anthropologists and sociologists have tended not to think in terms of it.[2] In Europe, on the contrary, peasant "culture" (as distinct from economy) has been called folk culture and folk lore; whereas to Americans "folk" tends to denote the rural illiterate proletariat, or Mexican Indians, or sometimes our own Indians. The concept of peasant is certainly needed in any wider comparative overview, and is likely to stay with us.

Of genuine interest is a brief book now available in English translation, *Farewell to European History*, 1948, by the historically-minded sociologist Alfred Weber, brother of Max. The relation between the two is illustrated by Alfred reacting productively against the irritant of Spengler much as Max reacted to Marxian doctrine. Weber wrote this "sketch" during the closing months of the collapse of Germany in 1945. It is concerned largely with the "Nihilism" which he pictures as overtaking the West, with its focal point in Germany. It ends with a chapter on "Intimations of Transcendence in the Realms of the Inanimate, Animate, and Spirit" written in a language of the past. Yet the introduction and first chapter present a vivid view of Western Europe as a unique phenomenon in human history, with its extraordinarily strong and varied dynamism expressed in a rapid succession of economic and sociopolitical phases, and tensely charged with impulses toward inner revolution or outward explosion. The changes sought in this culture were in idealistic rather than material ends; no other civilization, Weber finds, was "shot through with Absolutes" to the same degree as the Occidental, due to the flooding of the immature but vigorous peoples of the West by both Christianity and developed classic intellectualism. The "Homeric period" of Europe is set by Weber from 1000 to 1250. After this there follow loosening and break-up of dogma, redogmatization, nineteenth-century consumation, and destruction. Judgments may vary about the main body of the book and about its value in comparison with other interpretations; but the comparative delineation of Western civilization in its youth has much originality.

---

[2] Somewhat as in the political sphere we are only incipiently aware of the real resemblance of native high-Mexican political units to the Old World city states, from Sumer to the Netherlands.

For a dozen, in fact twenty years now, Gordon Childe's transformative interpretation of Old World pre-history as history, based equally on vast control of knowledge and extraordinary integrative ability, and riveted tighter in successive books, has dominated our thinking about some five millennia of the story of man. Thematically central have been his major revolutions, the Neolithic and the Urban. I acknowledge as much personal influence as anyone. However, a dozen years are a long time for an ideology as precise as this one to hold unchallenged sway. The first indications of challenge seem at hand.

For instance, Redfield in his just-cited *The Primitive World and Its Transformations* makes minor emendations on the relative importance of the two revolutions (1953, p. 6) and on the moral order of the Paleolithic communities (1953, p. 16). Carleton Coon's *The Story of Man*, whose range is from the earliest men to 1954 and its outlooks, differs not at specific points, but in attempting a new mold. It is in no sense antithetical—Childe is mentioned once—but it starts from the same facts to chart its own course. It is a fresh, spontaneous, vivid retelling of the human story, original in choice of materials, approach, and illustrations. It is more narrative than LaBarre's, but similar in fervor and versatility of phrasing.

Howells' *Back of History*, 1954, written with the pleasing skill to which he has accustomed us, departs less from the Childe pattern, though it does include the surviving ethnographic primitives and native America.

GENERAL THEORY AND METHOD

Bidney's important *Theoretical Anthropology* represents something of a reversion from the current anthropological trend, in that values are considered primarily as categories with reference to aesthetic, moral, and ideological norms, and that "normative science" is set up as something that "does make for absolute standards and is also compatible with freedom of inquiry and cultural progress" (1953, p. 432, summing up chapter 14). Propositions like these are large and difficult, and I do not believe they can be settled or even weighed wholly within anthropology. I suspect that Bidney is enunciating them from the framework of philosophy from which he came as a welcome recruit to anthropology. He evidently sees cultural relativism as a nihilistic principle and destructive near-illusion. I admit that it can become so to the fearful and defeatist, to those without aesthetic sensitivity, or to the moralist who knows his norm. I doubt that relativism *must* become nihilistic in its effects. I abhor negativism, and yet live with satisfaction in a plural, fluctuating, probing human world. That is an individual attitude; but I set it against Bidney's attitude which seems to me at bottom equally personal, though he has reenforced it with argument which I am not enough trained philosophically to refute with skill.

I do think if Bidney wants to convert anthropologists to the "absolute standards of normative science," he will have to begin with more tolerance for the relativistic viewpoint that we have adjusted to, and for the rich variety of the cultural and natural values we experience under it. Certainly many of us would not know how to proceed with the anthropology which is our life work if we had to spend our time henceforth measuring how far the many imperfect values of the human cultures we know fall short of an absolute norm. Perhaps, as first step toward a rapprochement, he can rephrase his portrayal of this norm in a manner less shocking to some of us.

Another point that Bidney touches on in his book is "creativity" (1953, pp. 148, 177–178). It is evident that one meaning which this term has is the discovery or achievement of new values. It is also clear that individuals as well as cultures and periods differ in kind as well as degree of their creativity; and that in concerning itself with values, anthropology is also concerning itself with creativity. Bidney is aware of this, but he skirts the subject with references to freedom and intelligence, humanism, voluntary effort. In my *Configurations*, in using genius as my principal index of comparative value achievements, I was certainly implying individual creativity, though, as I was concerned with historic profiles of cultures, I abstracted from the personalities of the geniuses dealt with. I took for granted that they possessed enough force and freedom to exercise creativity, and I then used the products of this creativity as a measure of the cultural growth or historical configuration of which they formed a part. It is therefore not because I wish to deny creativity that I raise the point of what Bidney means with his use of the term. Along with it he speaks of humanism, personalistic approach, freedom and intelligence, determination of cultural destiny, until one wonders whether he is not excepting free creativity as something outside the realm of nature. Such a view was once traditional in the humanities, and is no doubt still often maintained in spots in their isolation. If there are any anthropologists or other scientists that hold this position, they are few. I think Bidney owes us an answer to the question: Is his free humanistic creativity in nature or outside it?[3]

Ackerknecht has written an important paper "On the Comparative Method" in the volume in honor of Wallis, *Method and Perspective in Anthropology*, 1954. He points out how comparative anatomy underlay Darwinism and made its swift decisive triumph possible, and how when formal anthropology was launched it availed itself of an analogous approach for culture, which continued unquestioned until Boas's 1896 challenge. Ackerknecht holds that in modified form comparison has remained in use wherever the approach was historically oriented—which is true; and he believes it will be revived increasingly. He also points out that the pre-evolutionary idea of progress was well established in the cultural field before 1800, nearly a century before evolution broke through in biology.

This fact suggests another: namely that through its Hellenic as well as Judaic element our Western civilization was long committed to a static world view and imposed this on its science. Only the history of human beings and nations was allowed as unstable, though their changes consisted of accidentals and was meaningless as against the fixed master plan of the world. It was not until the later eighteenth century that the improvement of telescopes allowed astronomy to begin to become the historical science it is now, to be followed by geology and then biology, with universal human history being at least envisaged and sketched about contemporaneously with the rise of historical astronomy. One need only review the status of total Occidental thought and knowledge by 50-year periods since 1700 to realize that historicism in the wider sense consistently has made gains and is still gaining. Its spread and accumulations, while less showy than those of experimental science, have been equally consistent and great.

The early evolutionistic anthropologists failed because they possessed no analyzed and classified corpus of comparative knowledge of culture similar to that which biology had accumulated ready for reinterpretation by 1859. It was this corpus that enabled biology rapidly to transform the generic concept of evolution into a solidly-firmed history of life. Without counterpart of this, the "classic" anthropologists could only guess at over-all formulae and try to support them with partisanly selected evidence. Robert Spencer in the same 1954 volume as Ackerknecht discusses "The Humanities in Cultural Anthropology," following farther Ruth Benedict's presidential address of 1947 and a passage in Evans-Pritchard's *Social Anthropology*, 1951. Spencer accepts the Benedict contention that, point for point, problems discussed in the humanities are closer to those in anthropology than are most investigations in social science. This is precisely the position elaborated—from another premise—farther on in the present essay (p. 307). Other points of corroboration or extension of Spencer's position can be found on pp. 282-283 of my "Summary" to the volume.

---

[3] Since this passage was written, Spencer has reviewed Bidney's book in the December 1954 number of the *American Anthropologist*, making much the same point.

VALUES

The subject of values is one that has been consciously faced in anthropology in the last ten years, and increasingly so. Values were long regarded as unscientific and as improper to introduce into scientific context. Actual reference of course was mainly to value judgments; that is, ratings of values as better or worse. Gradually it dawned on anthropologists that we were actually describing, defining, and analyzing out characteristic values in every broader or integrative picture of a culture—in every ethnographic account that was more than an atomistic enumeration. Cultural content, I said in 1946, falls into patterns as regularities of form and style and significance, and it embodies values which may be formulated or felt by the society, and which it is part of our business as anthropologists to characterize and define.[4] This was stated not programmatically but as descriptive of established practice in history as well as anthropology. The one restriction specified was that recognition of values must be physiognomic and comparative, not ethnocentrically normative. These dicta made no particular stir but aroused no particular contradiction.

In short, anthropologists have long recognized that there are cultural values and have occasionally referred to them more or less specifically, mostly without examining the concept abstractly. Endeavors to deal deliberately both with particular values and with a theoretic formulation of values in general have characterized the last decade and especially quinquennium.

The largest forward lunge was the establishment in 1949 at Harvard University of a six-year program for "Comparative Studies of Values in Five Cultures" by the Laboratory of Social Relations. The five cultures are represented by Zuñi, Navaho, Spanish-American, Mormon, and Texan communities in the "Rimrock" area of New Mexico. The instigating spirit was Kluckhohn's; the field workers, associates, coordinators, and other participants have been numerous and, besides members of the four groups in the Department of Social Relations, have included philosophers, economists, political scientists, musicologists, etc. Monographs and articles have been issued since 1951; several large-scale ones are now in proofs and should be issued before the present lines appear. It will be a year or two more before the findings as a whole are available and the results appraisable—presumably by the next issue of this *Yearbook*. The activity has been concerted and great; it has already drawn the subject out from its long limbo.

Theoretically, the basic paper is Kluckhohn's "Values and Value-Orientations . . . ," 1951, subtitled "An Exploration in Definition and Classification." Kluckhohn defines values as conceptions of desirables. The conceptions may be explicit or implicit, characteristic of individuals or of groups. The desirables influence selection from available modes, means, and ends of action. Values are abstracted not from neurological properties but from behavioral events, verbal and non-verbal. They are consistently connected with approvals and disapprovals. Value concepts, being pointed at desirables, are emancipated from immediate physiological stresses and from ephemeral, merely specific situations.

Verbalizability is said to be a necessary test of value. Accordingly, instinctual behavior and needs, being below the level of abstraction, are not part of the realm of value.

Values are mostly cultural products, but they are given private interpretations. In fact, idiosyncratic values account for changes in group values. In cultural systems, values give consistence and congruence; in personalities, dependability and regularity. Above all, they add a necessary element of predictability to social life. Values always have an affective as well as cognitive dimension; wish and appraisal are united in them.

Kluckhohn then proceeds toward a classification of values by their *dimensions* as follows:

---

[4] Slightly condensed from *The Nature of Culture* (1952), No. 11, pp. 104–105.

Modality: positive, negative.
Content: aesthetic, cognative, moral.
Intent: mode, instrumental, goal.
Generality: specific (including role), thematic.
Intensity or Incidence: categorical, preferential, hypothetical (Utopian traditionalistic); central, peripheral; dominant, variant, deviant.
Explicitness: explicit, implicit.
Extent: idiosyncratic, personal (private), group, universal.
Organization: isolated, integrated.

Finally Kluckhohn reviews the relation of values to attitudes, motivation, cathexis, needs, goals, acquired drives, utility, functions, sanctions, ideals, belief, and ideology.

It is obvious that we have here the notable groundwork for a systematic theory of values and a segregation and sharpening of the conceptual tools for their empirical study.

If I dissent, it is at one particular point only so that I may not be thought to assent now where I have differed before: in regard to universal values. I believe the probability is high that there are universal human values; I distrust the motivation of seeking them; I do not believe they can be established by random enumeration. Witness the haphazard and tattered list compiled by so sharp a mind as Linton's in his posthumous paper of 1954. What we need is an approach that is conceptually more adequate.

Another and distinct facet of the interest in values was first worked out by the sociologists Alfred Weber (1920, already mentioned above), MacIver (1931, pp. 225–236; 1942, pp. 272–288), Merton (1936). This was the tripartite segmentation, by Weber, of the sociocultural stream of phenomena into non-cumulative "cultural movement," accumulative "civilizational" process, and "social" process. Merton distinguished the two former ingredients as subjective and objective; MacIver, as social ends and social means. Subsequently, MacIver recognized three "orders": the cultural, technological, and social. This is close to Weber's formulation, except that Weber includes economic-political activity in his social process, and science in his civilizational, whereas MacIver is inclined to transfer economics and politics to his "technological" order, but fails to place science in it.[5] Kroeber (1952, pp. 152 166) subsequently suggested renaming the first two segments "value culture" and "reality culture,"—to which "social culture" would correspond for the third segment when the approach was primarily cultural, or "society" or "social action" when the weighting rather was sociological. He inclines to separate pure science from technology and place it at least partly in the value segment on the operational ground that historically science has generally behaved like philosophy, religion, and the arts in developing in intermittent spurts. He was non-committal on the question of assignment of economic and political behavior, where Weber and MacIver differed. He would now tend to see political structure and function as an extension of social, but on the other hand to construe economic activities as predominantly in the reality angle, again on the operational ground that wealth tends to accumulate through history—though subsistence economy tends to go on repetitively like society. Moreover he has pointed out that actually it is not so much a matter of segments into which the total range of culture can be subdivided as of positions on a three-cornered scale. He cites a continuum from technology to science to philosophy to religion to the arts and back to aspects of technology.

Sorokin (1947, p. 317; 1950, p. 197) touched the problem tangentially in his classification of culture into "pure systems" and "mixed or derivative" ones. His pure systems number six: language, science, philosophy, religion, fine arts, ethics. It is obvious that the last five all relate to or contain values, just as they are all ideological. Technology, economy, and politics Sorokin includes among his "mixed or derivative" systems. He does not recognize a "social" system within culture because he has previously separated the societal from the cultural aspect of the sociocultural world.

---

[5] The old Cooley and Park dichotomy of "moral order" and "technical order" referred perhaps more to two kinds of societies than to two kinds of culture, but Redfield (1953, pp. 20–22) has brought it into appropriate relation to his primitive folk and urban-civilized distinction discussed above.

Thurnwald (1950, pp. 38, 104, 107) had construed technological "civilization" as an irreversible accumulative process with which "culture" operates as a means; culture is defined enumeratively but without explicit reference to values.

These distinctions are likely to be followed further in the next few years. As of the turn of 1954, they are beginning to appear in program titles. Their main concern is not so much the topological classification of culture by application of obvious common sense, as it is to advance its qualitative analysis. It is something to realize that values are not uniformly diffused through culture but concentrated in some of its activities. The same is true as regards the quality of accumulativeness, which is now visible as a variable within culture rather than a constant criterion distinguishing all cultural from all organic evolution. This area of thought thus is one in which several important concepts intersect: values, accumulation, progress, cultural repetition of parallelism, and the role of culture in evolution. If in addition to classification of any of these concepts, there results a more meaningful classification of the areas or segments of culture—language for instance still is not fitted in with the rest very satisfactorily—that would be so much additional profit. Moreover, the problem can be attacked both historically and dynamic-analytically, which is not true of all fields of anthropology. Finally, the subject is essentially interdisciplinary. It was sociology that really broke the way, but comparative and culture history will undoubtedly be equally interested.

CULTURE AND PERSONALITY

We have at last a systematic, eclectic, and well-rounded book on culture and personality—John Honigmann's 1954 volume of that title. It will make relatively easy the teaching of courses in the field. Just the bibliography of 500 titles will help. It is fine to have available a balanced summary.

At the same time, the very fact of the condensation of the total subject matter into the range of a text-book makes evident certain limitations of field which have not yet been transcended, and which obtrude more nakedly than in a collection of forty or fifty papers by specialists such as the basic assemblage by Kluckhohn and Murray. Honigmann defines as he goes along: such as, community versus society, and adaptive survival versus adjustment. But a statement like "Suicide is a means of overcoming perplexing problems and anxieties: it reduces a variety of tensions, but in doing so it also kills the person," manifests a quaint naiveté lacking in the original passage in Kluckhohn and Murray that suicide is more or less explained by having an adjustive though not an adaptive survival value.

Kluckhohn and Murray named their famous anthology PERSONALITY IN *Nature, Society, and Culture.* Honigmann begins his book with this sentence: "The student of culture and personality studies what happens to personality by virtue of an individual's membership in enduring groups whose members follow socially standardized ways of acting, thinking, and feeling." In other words, the subject matter *is personality* in such and such situation. Now if personality falls primarily into some one division of science, it falls into psychology rather than into physiology, anthropology, or sociology. A possible alternative would be to assert that personality does not fall into any one territory but is wholly a crossroads or transfer point between anthropology, psychology, sociology, and possibly still other scientific subjects. However this extreme position has not been outrightly maintained, so far as I know. We return, accordingly, to the definition of "culture and personality" as being the study of the psychological topic of personality not in abstraction but under certain conditions of social and cultural influence.

Honigmann goes on: "In the main, however, culture and personality remains largely a pursuit of cultural anthropologists who are familiar with psychological methods and principles." This characterization seems fair factually and would presumably be accepted by most of those familiar with the subject. In short, the field is the study of a psychological subject mainly by anthropological specialists more or less familiar with psychology. This finding is supported by the ratio of anthropological to psychological authors and titles in Honigmann's bibliography: 58 to 42, with sociology barely one-third as numerous as anthropology.

It is evident from Honigmann's volume that what culture and personality pre-eminently yet lacks is a large corpus of cohering informational fact. But I do not sense that there exists within the subject much feeling that there is need for such a corpus. Each investigator picks his problem and field independently, hoping to make an experiment or discovery that will be crucial. Such a result can indeed sometimes be achieved in a developed science like physics or chemistry or genetics—just because of the coherent body of knowledge and system of interpretation already established. The betting will be that only one of a thousand inquiries will produce anything revolutionary of Galilean scope; but also that nine hundred of a thousand will produce something—minute, modest, or considerable—that will be of significance just because it ties up with a going system and extends or modifies it. Culture and personality studies are being pursued with intensity and devotion, but one feels that they are popping off in diverse and unaccountable directions much like a string of fire-crackers. One inquirer is interested in tensions, another in Rorschachs, another wants to experiment on frustration; but in effect, each starts off on his own--except when a string of them go in for an exaggerated fad like toilet training. I am certainly not an active participant in the field; but, simply on the basis of experience in related ones, I feel that one might plan an overall attack that would be more effective. Let me suggest.

Culture is one component of the culture-and-personality field, and most of what we know of human culture has been organized by classifications on a spatial basis. The characteristics of the native cultures of areas like the American Southwest, Northwest, Plains, and Mexico are well recognized, and it would be a relatively economical and presumably productive procedure to define systematically the corresponding ethoses or modal personalities, from which as a body of systematized findings it would be profitable to take off both to more extended comparisons and to further "testing" of principles revealed. In fact, a beginning had been made in this very direction by Benedict in her first comparison of Pueblo and Plains as "Apollonian" and "Dionysian" respectively, although by 1934 in *Patterns of Culture* she had narrowed her approach, in the direction of highlighting sharper contrasts, by focusing on the selected single tribes of Zuñi and Kwakiutl. However, Devereux (1951) as Honigmann points out, has emphasized a "Plains area ethos" which embodies and historically underlies the ethos of any one Plains tribe. Honigmann himself recognizes that a "relatively homogeneous personality" can be discerned throughout the subarctic coniferous forest belt of native America—in fact the names of Cooper, Landes, and Saindon can be added from his own text to those of Barnouw, Caudill, Hallowell, and himself whom he cites as contributors to this finding. But why then not match this discernment against that of an ethos of the Plains, or of the agricultural woodland which contains ethnic relatives of the Cree, Chippewa, and Naskapi of the subarctic? Or above all against the ethos of the adjacent Eskimo who contrast so vividly to ethnologist and layman? With the perspective derivable from characterizations of two or more such ethoses, it would then be possible to go on to look for definite correlations with environment, food supply, population density, settlement pattern. Not that any of these would presumably turn out to be the sole or even the predominant cause of the differing ethoses, but they might well be contributing factors and thus put us in the way of having in hand not only descriptions but reliable partial explanations.

While teaching a graduate course at

Columbia University a few years ago, I compared the ethoses of eight tribes inhabiting a continuous arc of more than a thousand miles—Yurok, Yuki, Yokuts, Mohave, Walapai, Navaho, Zuñi, and Arapaho—for all of which there are adequate ethnographic data and with all of which I had had personal contact (least with the Navaho). It became evident that an unproductive habitat, which enforced nearly constant but scattering food quest, tended strongly to be accompanied by meager and undifferentiated institutions as well as personalities. But where there was a chance of surplus food, or high-value food secured rapidly, institutional life developed, without serious setback even in the face of occasional famines. Thus the culture achieved a degree of richness and specialization, and with these the representative personality also became specialized as well as, above all, definite. It seems clear that Yurok, Mohave, Zuñi, Arapaho personalities are about as differentiated from one another as are the cultures, and that while their "hues" are distinctive, they roughly agree in the *measure* of their "colorfulness" or saturation as against the drab personality of the poor Walapai scattered over their desert in which they never starved, yet could never forge ahead. All this perhaps was expectable, but it was satisfying to see the personality formulations consistently falling into patterns correlative with the known ethnography and ecology.

In fact, my orally presented findings seemed in concord with the famous ones of Benedict, except that I chose my material for geographical continuity and near-contiguity, whereas she spaced hers widely to attain striking contrast. She was justified in this because twenty years ago it was still important to impress a belated or sluggish world with the *fact* of variety of patterning of culture and of personality. But that principle is now long established and accepted; the present need is for a steady, step-by-step extension of observations over geographically (or historically) coherent areas.

"National Character," by Inkeles and Levinson (1954) is a formal theoretical and methodological review, whose intrinsic importance is enhanced by a judicial quality due to the authors being a sociologist and a clinical psychologist. They equate national character with the "structure" of modal personality, and insist that the latter be formulated from psychological study of an adequate sample of persons studied individually; which in general has not been the case, its place having been taken by psychological analysis of "collective policies and products" (which apparently means sociocultural manifestations). The characterizing features are enduring personality features—high level abstractions of generic dispositions in adults. National character cannot be equated with culture, and must be defined as a determinant rather than a form of behavior. Mead's approach is defined as psychocultural, that is, supported mainly by non-individualized, collective facts of culture; as was Benedict's to an even greater degree.

It is evident that national character is here reviewed as a specifically psychological problem. It is therefore dependent on a theory of personality. Such a theory, however, psychology still lacks, except for psychoanalysis; and psychoanalysis remains selective and partial in its coverage, besides being even today stubbornly resisted among large contingents in psychology. To which I would add that there is no perceptible rush of psychologists to secure studies of representative samples of individuals from a representative number of nations or cultures.

Anthropologists of course possess even less personality theory of their own, and have accordingly too often tended to operate with discrete fragments of psychoanalysis that were easily broken off from the whole and easily operated with, and at the same time held out hope of large, easy rewards, as long as one assumed that adult character might be largely determined by childhood experiences like swaddling, weaning, and toilet training. On the other side, when anthropologists feel impelled themselves to secure the psychological test samples that they are interested in but psychologists are not getting, they protectively fall back on techniques specialized enough to look fool-proof. My fundamental criticism would be not that Rorschachs or explanations from swaddling are necessarily untrue or wrong, but that at best they can give insights into only limited and free-floating patches of the total area of phenomena.

In view of the foregoing, perhaps the best thing we anthropologists can do is to consciously limit our efforts to "psychocultural" studies of Mead's type. Not only has she led in initiating these, but she has piled up an impressive mass of observations and formulations on half a dozen cultures—much the largest body of data we possess, sometimes richly evidenced and always perceptive. If only she would refrain from pushing on beyond to where we cannot defend her!

One constructive suggestion may be in order. LaBarre (1945, 1946) has contrasted Chinese and Japanese character as differing consistently in respective slackness and tension, in spite of one culture being mainly derived from the other and probably the bulk of their content being the same. He also uses other terms like orality and anality, but I pass these over as being explanatory more than descriptive. Now degree of tension is one of a series of polarities which Jakobson and associated modern linguists have recently set up as a frame within which to define the variety of phonemes of human language—the other being duration, volume, tonality, voicing, etc. The possible character axes or "dimensions" of course mostly would be quite different for personality than from those of speech, but, for descriptive and organizing purposes, might not a series of them be useful? I think for instance of polar qualities like order and organization, or cleanliness and finish (both of which might prove to bracket with tension, or again might not); or competition; or retractility; time-mindedness; verbalization; and so forth. This suggestion rests on the assumption that organized, analytic description ordinarily must precede causal-functional determination, and that we have had a premature excess of attempts at the latter in this and related fields of psychic and cultural inter impingement.

SOCIAL SCIENCE INFLUENCES

Two recent general books by J. S. Slotkin deserve comment, partly because it is not too overtly patent of what they are symptomatic. They are *Social Anthropology*, 1950, and *Personality Development*, 1952. The latter is an endeavor at a systematic theory of personality development, with emphasis on the social and cultural factors involved. A natural question is why an anthropologist should want to write systematically on personality while there are thousands of psychologists around. A natural answer would be the already discussed statement by Honigmann that in the field of culture and personality one studies what happens to personality viewed societally. The two aims certainly are close together; just as the two authors are of the same age group and presumably similar intellectual bent and antecedents.

Slotkin's *Social Anthropology* is more completely novel in American anthropology. The subtitle is *The Science of Human Society and Culture*. It is a remarkable book in the precise definition of its aim, method, and technique, and in the consistent rigor with which these are adhered to. It has evoked little reaction from our profession. The one principal review—by an approximate age-mate—handled the book roughly. The private comments I have heard were unsympathetic. Older anthropologists have generally ignored it. They are busy with work they have developed for themselves and which the book mostly ignores, so they have reciprocated. Yet any book so thoroughly different as this is from the usual general work on anthropology, and so competently carried out, challenges attention. It may be a sterile deviation, or it may be a fertile seed.

As nearly as I can make out, Slotkin is a system-maker and a deductivist. He begins with propositions and he works down from the most general to the more and more particular. Last come the concrete illustrations. These are literally only exemplifications of general propositions. Therefore they never constitute an extended and coherent body of fact, but are torn out of their context of occurrence so as to widen their illustrative range by contrast. They are selected with much originality for their vividness, and many of them are exceedingly interesting, apart from the point they illustrate. But they are always marshalled toward an objective, like ranks of privates that are there to make Gen. Principle win a campaign. To be sure, this was also the method of Boas in many of his "theoretical" papers and passages. But Boas made particular theoretical points; he never wove a larger theoretical system. This has of late been charged against him as a defect; but it may have been part of his strength. Certainly he himself would have felt that with a wide-embracing, close-knit system he would have impaired his integrity as a scientist. Skotkin evidently believes that the most important thing he has to present is his theoretical system, else he would not protrude it so. His preface says that he is offering "a systematic introduction to social anthropology," which hitherto has mainly "developed as an empirical and comparative study." The book "includes a systematic body of . . . fundamental theory concerning the nature and effects of human society and culture." The "propositions" he makes are then "demonstrated" by comparative data. "Concepts are analyzed and defined as rigorously as possible."

Here is a sample of the procedure. Chapter 9 is on the Esthetic World View as differentiated from the Naturalistic, Supernaturalistic, and Mystical World Views. It begins: "Estheticism is the environmental approach which achieves adjustment by finding situations to which one's responses are themselves satisfying, i.e., are an end in themselves rather than a means." Play is "the esthetic practices of a society which embrace customarily and intrinsically satisfying behavior"; art, those practices through which society "changes parts of the environment into the kinds of situations which elicit intrinsically satisfying responses." Representational art (condensed from pp. 287-298) "(a) harmonizes the universe . . . (b) socializes the universe . . . (c) acts as a social control . . . (d) strengthens group solidarity . . . (e) enriches the observer's perception . . . (f) may provide a certain amount of wish-fulfillment." These citations fairly illustrate the type and framework of Slotkin's procedure.

It is evident how drastically different this procedure is from that hitherto prevalent in general, theoretical, or text books of anthropology. The aim is a wholly theoretical system, built up by formal definition and reflection on common knowledge, carried through deductively, and with data admitted only as exemplary illustration of general propositions. I do not know how far manuals of physics may have served as a conscious or unconscious model for Slotkin's presentation. But, if so, it is a misapplication, since, however physics may be represented to the beginning student as a finished product, physics has come into existence through a vast body of highly technical, non-common-sense knowledge; and while it has attained to many rigorous definitions, it did not begin with them. Perhaps Slotkin's motivation is not imitation of physics, but is essentially an urge toward dialectic, toward logical construction, and toward conceptual systematizing as such.

Let me be clear: I am not attacking Slotkin's system. So far as I can see it is sound, and I know I could not evolve a better one, nor probably even propose an equally coherent one. I am pointing out how wholly different it is from previous anthropological presentations. Since the beginning, anthropologists have been either empirical, working slowly point by point toward generalizations, or they have been particularly speculative for particular hypotheses. With Slotkin we are even in a new atmosphere of language: "environmental," "approach," "achieve," "adjustment," "situations," "responses," "practices," "behavior," "elicit," "satisfying"—it is in such pale-gray, depersonalized words that the findings are deliberately clothed. Life and color remain only in the quoted excerpts which humbly serve to validate the propositions that make the system.

What is it that we have here? Has Slotkin made the first stab at presenting anthropology in more scientific form than the rest of us? Or has an obsessive urge toward system at all cost driven him to manufacture a largely verbal one before anthropological knowledge and thinking are ready for thorough abstract systematization? I will not presume to give the answer since I am aware of partiality for the concrete and pluralistic tradition which I have grown up in and love. But the question is important and not to be dismissed too offhandedly. Quite likely both kinds of answer are partly true. The future will tell. But what we can see fairly clearly now, as of 1954, is a trend of which Slotkin's book is symptomatic. This trend I shall now try to analyze and characterize.

Essentially it means the entry into anthropology of an overtly "social science" orientation. This entry was imperceptibly gradual at first, and thus is difficult to date exactly; but its influence is recognizable in the rise of acculturation as a subject of interest, of culture and personality, of applied anthropology. Slotkin is trying to organize a formal anthropological theory corresponding to economic, sociological, and psychological formal theory. The older anthropology saw some broad problems and made generalizations—Tylor alone would establish that. But it contained also a strong sensory, aesthetic, and experiential interest. It liked artifacts and it established museums; it was interested in the land and scenes in which peoples functioned; it liked to experience—at first vicariously and then in the flesh—how these peoples looked and behaved and what they had to say. It was part natural history in character, part humanities; but the humanities-like ingredient was non-normative, comparative, and broad-ranging instead of intensely particularistic, and therefore somewhat more prone than most humanists were to generalize, though its generalizations mostly remained fairly humble, step-by-step, "low-level."

Anthropology was often respected in its early days, but it was also a "queer" pursuit mainly of odd things. It was only slowly introduced into mass education, and the colleges had difficulty fitting it into a curricular compartment. They finally settled pretty generally on classing it as a social science; almost inevitably so where sociology was already well established with the collegiate public, so that it was administratively convenient to add anthropology as an annex. Being easily the most picturesque, concrete, and least formalized of the social sciences, anthropology exercised an appeal on many social science students, and some of these even came over into it. But they usually came with social science antecedents and interests in place of the natural history or humanistic ones that had been customary among the earlier anthropologists.

The enforced association with sociologists over most the central area of the United States further accustomed both anthropological teachers and students to an impersonal, non-face-to-face approach, to dealing with familiar rather than remote or unusual experience, to formalism and order, to definition, to seeking abstractness as an end in itself, to worrying about quantification and its validation, to being "socially conscious." Psychology, starting just as far from social science as had we, escaped from philosophy to throw itself into experimental science, then underwent the shock of Freudianism, and entered the social science fold at least half willingly. There, reciprocal influence with anthropology seems to have been what largely generated culture and personality as a subject.

In short, a considerable part of the present-day population of American anthropologists has antecedents and generic orientation pretty drastically different from the remainder as well as from the whole anthropological population of thirty or forty years ago. Slotkin's book expresses in the most extreme form the attitudes and interests of the growing minority. It is also no mere accident of idiosyncracy that his second book, on personality development, is essentially outright psychology. Nor is it accident that Honigmann's book is basically about what happens to personality under culture, and that even its style and manner—the formal abstractness, muting of vividness, and the rest—are similar even though perhaps less extreme than in Slotkin.

With two intellectual ancestries and motivations now represented among anthropologists, we are de facto having two streams of thought flowing. This is perhaps the major development in anthropological thought of the past generation, and it seems to me by now to be incontrovertible.

What lies ahead? Prediction in matters like this is uncertain, and in a sense sterile, even if the future happens to vindicate it. It is more important to realize to the full what the forces at work are and how they are impinging. If thus we push our examination farther, it becomes evident that the several strains in the older, natural history-humanistic kind of anthropology, diverse as they are—biological, prehistoric, ethnographic and culture-historical, archeological, and linguistic—are not falling apart under social science impact. In spite of their growing specialization, they seem as much determined as ever to stick together. That means that if there is a split, the secession is likely to be of the social science or "behavioral" group—social, personality, acculturation, and applied anthropology—from the remainder. And at that I am more doubtful that such a budding off will take place. The vast majority of anthropologists whose compelling interests lie on that side would apparently be grievously distressed over a split. I do not believe that Slotkin and Honigmann are even dreaming of leading a secession. Any strains that arise therefore bid fair to be not professional, but intellectual.

We have indeed an actual case to observe—the formation of Social Relations at Harvard University in 1946 by the withdrawal of Social Anthropology and Social and "Clinical" (read Personality) Psychology from their old departments and their union with Sociology. This was a step very difficult for other universities with lesser resources to follow; and it has not been followed, in spite of the many existing sociology-anthropology departments that superficially look as if they already constituted half the makings of a Social Relations group. The straight, or old-fashioned, anthropology department at Harvard has not suffered, but has flourished and grown. The anthropologists in social relations have none of them renounced their professional affiliation; in fact, except for some shuttling back and forth of courses and students, they seem to stand much where they would have stood if there had been no new combination department—except that there are more of them. And intellectually the greatest increment due to social anthropology within Social Relations has been the Values Study—a project that would have been difficult of initiation by an anthropological department that was founded on and around a museum. So the net record to anthropology to date is some definite gains and no loss.

The influence of the Harvard example on other universities is not reflected in the departmental organization of these universities but in their "general education" teaching. Since such teaching is intended normally to be terminal in its subject, and comes at the lower undergraduate level, it may affect the thinking of the students reached but will not ordinarily affect the thinking done in connection with anthropological research.

The foregoing applies to the United States. It does not hold for Britain, where social anthropology is in a way dominant, because sociology is so little developed in Britain that anthropology has to care for its interests also and is therefore pulled more to the social side. And on the continent of Europe there is of course nothing corresponding to American anthropology: prehistory, ethnology, and (physical) anthropology have different roots and affiliations, remain and mostly want to remain distinct, and linguistics feels itself wholly and only a humanity. This European disjunctive separatism is undoubtedly causing the European streams of thought in what we call anthropology to flow quite differently from ours. But it would be rash to predict what the outcome of the difference will be.

How about an ultimate reintegration of the social anthropological group of interests with the other and longer established ones?

I do not expect that if there is such a reintegration it can be at all near at hand. It is in the unconscious or subconscious bents that the differences largely originate, and it takes time to reach these. The socially conscious are in the nature of things radar or other-directed; old line anthropologists are notoriously inner-directed, and they like to experience directly, not vicariously. They also like to observe, and have trained themselves to observe; the social science type, to be articulate. There will be rapprochements, but we must not expect these to come fast. Nor should they be one-sided. Perhaps we of the older anthropological tradition can begin, or here and there have already begun, to learn from our social scientist colleagues greater precision in formulation, the need not to let the fondling of information delay generalization unduly long, and such like virtues in which we have not always shone.

REFERENCES

ACKERKNECHT, ERWIN H.

1954 "On the Comparative Method in Anthropology," pp. 117–125 in Spencer, R. F. (ed.), *Method and Perspective in Anthropology*. Minneapolis: The University of Minnesota Press. 323 pp.

BARNETT, H. G.; BROOM; VOGT; WATSON

1954 "Acculturation: An Exploratory Formulation" (The Social Science Research Council Summer Seminar on Acculturation, 1953), *American Anthropologist*. Vol. 56, No. 6 (Part 1), pp. 973–1002.

BENEDICT, RUTH

1948 "Anthropology and the Humanities," *American Anthropologist*. Vol. 50, No. 4 (Part 1), pp. 585–593.

BIDNEY, DAVID

1953 *Theoretical Anthropology*. New York: Columbia University Press. 506 pp.

COON, CARLETON S.

1954 *The Story of Man*. New York: Alfred A. Knopf. 437 pp.

DEVEREUX, G.

1951 *Reality and Dream*. New York: International University Press. 438 pp.

EVANS PRITCHARD, E. E.

1951 *Social Anthropology*. London: Cohen and West, Ltd. 134 pp.

GREENBERG, JOSEPH H.

1954 "A Quantitative Approach to the Morphological Typology of Language," pp. 192–220 in Spencer, R. F. (ed.). *Method and Perspective in Anthropology*. Minneapolis: The University of Minnesota Press. 323 pp.

HONIGMANN, JOHN J.

1954 *Culture and Personality*. New York: Harper and Bros. 499 pp.

HOWELLS, WILLIAM

1954 *Back of History: The Story of Our Own Origins*. New York: Doubleday. 384 pp.

HUXLEY, JULIAN S.

1942 *Evolution: The Modern Synthesis*. London: G. Allen and Unwin, Ltd. 645 pp.

1954 *Evolution in Action*. New York: Harper and Bros. 182 pp.

1955 (In press) "Man's Place and Role in Nature," Columbia University Bicentennial.

HUXLEY, JULIAN S.; HARDY, A. C.; and FORD, E. B. (eds.)

1954 *Evolution as a Process*. London: G. Allen and Unwin, Ltd. 367 pp.

INKELES, A. and LEVINSON, D. J.

1954 "National Character: The Study of Modal Personality and Sociocultural Systems," Vol. 2, ch. 26, pp. 977–1020 in Lindzey, G. (ed.), *Handbook of Social Psychology*. Cambridge, Mass.: Addison-Wesley. 2 Vols.

KLUCKHOHN, CLYDE

1951 "Values and Value-Orientations in the Theory of Action." pp. 388–433 in Parsons, Talcott, and Shils, E. A. (eds.), *Toward A General Theory of Action*. Cambridge, Mass.: Harvard University Press. 506 pp.

Kluckhohn, C. and Murray, H. A.

1948 (1953 with D. Schneider) *Personality in Nature, Society and Culture.* New York: Alfred A. Knopf. 701 pp.

Kroeber, A. L.

1944 *Configurations of Culture Growth.* Berkeley: University of California Press. 882 pp.

1946 "Culture, Events and Individuals" (abstract of paper given at a Viking Fund Supper-Conference, Oct. 25, 1946). Published as No. 11, pp. 104–106 in Kroeber, A. L., 1952, *The Nature of Culture.* Chicago: The University of Chicago Press. 437 pp.

1948 *Anthropology.* New York: Harcourt Brace and Co. 856 pp.

1950 "Reality Culture and Value Culture" (prepared in part for meeting of the National Academy of Sciences). Published as No. 18, pp. 152–166 in Kroeber, A. L., 1952, *The Nature of Culture.* Chicago: The University of Chicago Press. 437 pp.

1954 "Critical Summary and Commentary," pp. 273–299 in Spencer, R. F. (ed.), *Method and Perspective in Anthropology.* Minneapolis: University of Minnesota Press. 323 pp.

n.d. Ms. "Linguistic Time Depth Results so Far and Their Meaning."

Ms. "On Human Nature."

LaBarre, Weston

1945–1946 "Some Observations on Character Structure in the Orient. I. The Japanese; II. The Chinese." *Psychiatry*, Vol. VIII, pp. 319–342, 1945; Vol. IX, pp. 215–237, 375–395, 1946.

1954 *The Human Animal.* Chicago: The University of Chicago Press. 372 pp.

Linton, Ralph

1954 "The Problem of Universal Values," pp. 145–168 in Spencer, R. F. (ed.), *Method and Perspective in Anthropology.* Minneapolis: University of Minnesota Press. 323 pp.

MacIver, Robert M.

1931 *Society: Its Structure and Changes.* New York: R. Long and R. R. Smith. 569 pp.

1942 *Social Causation.* New York: Ginn and Co. 414 pp.

Merton, R. K.

1936 "Civilization and Culture." *Sociology and Social Research*, Vol. XXI, pp. 103–113.

Redfield, Robert

1941 *The Folk Culture of Yucatan.* Chicago: The University of Chicago Press. 416 pp.

1947 "The Folk Society." *American Journal of Sociology*, Vol. 52, pp. 239–308.

1953 *The Primitive World and Its Transformations.* Ithaca: Cornell University Press. 185 pp.

Sjoberg, C.

1952 "'Folk' and 'Feudal' Societies." *American Journal of Sociology*, Vol. 58, No. 3, pp. 231–239.

Slotkin, J. S.

1950 *Social Anthropology.* New York: The Macmillan Co. 604 pp.

1952 *Personality Development.* New York: Harper and Bros. 401 pp.

Sorokin, P. A.

1947 *Society, Culture, and Personality: Their Structure and Dynamics.* New York: Harper and Bros. 742 pp.

1950 *Social Philosophies of an Age of Crisis.* New York: Beacon Press. 345 pp.

Spencer, Robert F.

1954a "The Humanities in Cultural Anthropology," pp. 126–144 in Spencer, R. F. (ed.), *Method and Perspective in Anthropology.* Minneapolis: University of Minnesota Press. 323 pp.

1954b "David Bidney: Theoretical Anthropology" (review). *American Anthropologist*, Vol. 56, No. 6, Part 1, pp. 1107–1109.

Spencer, Robert F. (ed.)

1954 *Method and Perspective in Anthropology* (Papers in Honor of Wilson D. Wallis). Minneapolis: University of Minnesota Press. 323 pp.

Spiro, Melford E.

1954 "Human Nature in its Psychological Dimensions," *American Anthropologist*, Vol. 56, No. 1, Part 1, pp. 19–30.

Swadesh, Morris

1950 "Salish Internal Relationships," *International Journal of American Linguistics*, Vol. 16, No. 4, pp. 157–167.

SWADESH, MORRIS *et al.*

1954 "Symposium: Time Depths of American Linguistic Groupings," *American Anthropologist*, Vol. 56, No. 3, Part 1, pp. 361–377. (For partial bibliography of Swadesh, 1952–1954, see p. 364.)

THURNWALD, R.

1950 *Der Mensch geringer Naturbeherrschung: sein Aufstieg zwischen Vernunft und Wahn.* Berlin, Germany: Walter de Bruyter and Co. 160 pp.

USHER, ABBOTT PAYSON

1954 *A History of Mechanical Inventions.* Rev. ed. Cambridge: Harvard University Press. 450 pp.

WEBER, ALFRED

1920 "Prinzipielles zur Kultursoziologie," *Archiv fur Sozialwissenschaft und Sozialpolitik*, Vol. 67, pp. 1–49.

1948 *Farewell to European History: or, The Conquest of Nihilism* (Trans. by R. F. C. Hull). London: K. Paul, Trench, Trubner. 204 pp.

The Integration of Anthropology

SOL TAX

Dr. Tax is Professor of Anthropology at The University of Chicago. He is Editor of the American Anthropological Association and Chairman of The University of Chicago Behavioral Sciences Self-Study Committee. He has served as editor for the XXIXth International Congress of Americanists, 1949, and also, with others, for the Wenner-Gren Foundation's 1952 International Symposium on Anthropology. His works include The Social Organization of the Fox Indians, 1937; "Action Anthropology," 1952; and Penny Capitalism: A Guatemalan Indian Economy, 1953.

THE PROBLEM

Primates
Style
Structural Linguistics
Human Ecology
Cultural Values
Growth and Constitution

THESE six titles, selected from the fifty which appeared on the program of the Wenner-Gren Foundation's 1952 International Symposium on Anthropology (Kroeber and others, 1953), suggest the variety of subjects in the discipline in 1955, and raise some questions. Can such heterogeneity be maintained in a single discipline? What do techniques in linguistics have to do with primates, or primates with style or cultural values? The problems of the integration of modern anthropology loomed importantly in the discussions at the Symposium (Tax *et al.*, 1953). They plague a faculty of anthropology charged with building a curriculum which is defensible as rational and which also includes such diverse subjects as the sequence and chemistry of potsherds uncovered in Indian graves, personality characteristics of Russian peasants, the teeth of Sinanthropus, and the phonemic pattern of the Hottentot language. A graduate student impatient to get on with his archeological digging chafes through courses in linguistics, culture-and-personality, and folklore, less convinced of the logic of the enterprise than of the perverseness of the older generation. The anthropometry required of the student preparing for his study of comparative value patterns or kinship structures makes him wonder at the strength of tradition and of vested interests. The student working part-time in an assembly line for a dissertation on the factory work-group protests the need to understand the evidence for the time of the first peopling of America.

Is such a congeries of subject matters held together only by tradition and the interest of those who, having had to learn all this themselves, are determined that others will too? Is anthropology then destined to dissolve into its constituent problem fields? Or rather is there good enough reason for the continuing association of linguistics, physical anthropology, archeology, and ethnology to expect anthropology to maintain or even increase its integration, in the United States and elsewhere?

In 1955 the variety of subject matters in anthropology is felt to be a problem mainly among professionals (and students). I have examined twenty-six reviews of the publications resulting from the Wenner-Gren Foundation's International Symposium. Those by non-anthropologists (Lewis, 1953, p. 171) accept without question the variety:

> "Since anthropology is the scientific study of man and all his works, the symposium contains papers on human biology and humanistic sub-

> jects, as well as on a variety of aspects of systematic social science."

Or, if they do not simply take the variety for granted, they praise it (Malkin, 1954, p. 28):

> "Perhaps more than anything else, this volume shows that the study of human society cannot be left to a narrowly specialized discipline and that new knowledge in one may be essential to the development of others and vice versa."

> "The coverage is broad, but the outstanding concept around which this work has been developed is culture, as applicable to archaeological findings or in the study of contemporary primitive and advanced societies. Anthropology, considered as a "science of man" has tended to become more comprehensive . . . (J. E. N., 1953, pp. 347–348)."

Reviewers who are professional anthropologists more often see the variety as a problem, either factually as in the case of Daryll Forde (1953, p. 1016):

> ". . . the interconnexions between the various branches of anthropology have been more effectively maintained in the U. S. than in Britain and the rest of Europe. This is reflected in both the wide coverage and the conscious efforts at integration which are apparent in this inventory."

or of William A. Lessa (1953, p. 357):

> "Their scope is, of course, enormous and can be justified and understood only by bearing in mind that the *raison d'être* of anthropology is its special way of looking at man-study. That way is the comparative method . . ."

or proudly and defensively, as in the case of Wilson D. Wallis (1954, p. 99):

> "It seems a long cry from archeology to language; yet it was the use of carbon 14 diagnoses adopted by archeologists from physical chemists that suggested to a linguist, Swadesh, the possibility that words which drop out of separated languages that stemmed from a common parentage might be lost at an ascertainable rate."

In only one case is there outright criticism of the pretense to the integration of so wide a variety of subjects, by John W. Bennett, who (1953, p. 222) refers to

> "the so-called 'integration' of anthropology which has in fact been absent."

The fact that most American anthropologists defend anthropology as a single discipline may mean only that (as Forde points out) this is characteristic of American anthropology. It does not make anthropology more logical.

Similarly, the International Symposium itself was organized essentially in the American tradition. It may be argued that this strong influence in the direction of welding the sub-disciplines into one—many of the specialized scholars from abroad may well have been aware for the first time of anthropology as a unified discipline, and at least some were strongly impressed—was an aspect of the influence of American anthropology in imposing on others an *ersatz* unity. It does not prove the efficacy of the unity.

The questions that need to be examined are whether the integration is genuine or spurious; what the forces are that pull anthropology apart or together; and whether, in a worldwide view, anthropology is losing, gaining, or maintaining its integrity as a discipline?

It becomes clear at the outset that the kind of question with which this paper opens is not relevant to the problem of the integrity of anthropology. Kwakiutl grammar probably has nothing to do with a South African fossil primate. Anthropology cannot be justified on the slim basis that some day a connection may turn up, as happened when carbon 14 dating suggested the technique of glottochronology. The latter hardly depends on the former; but in any case expectation of such incidents is not the adhesive which for over a century has kept linguists and archeologists together as anthropologists—indeed, the linguists might otherwise have better joined the chemists! To ask what Rorschachs have to do with phonemes or potsherds is like asking what the big toe has to do with the appendix; whether removal of the appendix will particularly affect the toe misses the point of their connection, which is that the fate of either will affect the organism of which both are parts. Kwakiutl grammar, if important, is important to the study of language, which in turn is part of anthropology just as human paleontology is part of anthropology. Anthropology itself would be a different animal without either one. The question is not whether sets of data or techniques of different fields of anthropology are or are not usefully related, but whether anthropology as a historical organic continuum, with a traditional organization related to a broad interest in man, has been and remains a generally useful animal.

This statement of the problem, and the analysis to follow, are based on the view that (as anthropologists at least will recognize) a scientific discipline is both more than and less than a rationally organized system of thought and operations. It is a cultural tradition carried by a society; like any culture it transcends the individuals, but like all of them its character is formed also by accidents of personalities and of contacts through people with other traditions. A demand that anthropology be justified by showing the logical interrelations of all its ideas and operations is understandable, since the tradition of science demands rationality; but it has little to do with the problem of whether anthropology will maintain itself as a subculture. Indeed, incongruences and logical inconsistencies are necessary characteristics of a living branch of a science. It is therefore quite realistic, anthropological, and useful to treat anthropology as a society of people with their usual problems of organization and disorganization (of which this article is a symptom) and with their changing inherited tradition beset with contradictions, but valued and lived with as the most satisfactory alternative available. From this point of view, the training of students involves the usual problems of enculturation; interdisciplinary research involves the usual problems of cross-cultural communication, diplomatic relations, acculturation through marginal individuals, and the like; and understanding of the ways in which anthropology does or does not, or will or will not, maintain its integrity depends upon general theories of social and cultural integration and change.

THE NATURE OF THE INTEGRATION

The present review both of current tendencies and of the nature of anthropology in historical perspective leads with surprising forcefulness to the view that the pieces of anthropology are now and always have been joined together in a unique and functioning whole. The basis of the integrity of anthropology was established at the outset 115 years ago, and has not changed substantially from then to now. Nor is there reason to predict a substantial change to come.

The conclusions of the present study most briefly are that:

Anthropology may be viewed as a tradition (or a subculture) founded by scholars with interests as diverse as those today.

The founders shared a common passion for understanding and explaining the nature and origin of man and his works in all their rich variety.

They self-consciously and explicitly joined together as a group of intercommunicating scholars and almost at once established a body of values and traditions which have remained characteristic and which have set apart anthropology from other disciplines.

One of the valued characteristics has always been the freedom and obligation to draw upon knowledge from any source that might be relevant to problems of anthropology.

Scholars of any discipline have always been free to join the anthropologists if they share the common values sufficiently to be comfortable in a company of colleagues pursuing a very wide variety of subject matters and methods which they are interested in communicating.

Each anthropologist has characteristically been part of another company of scholars pursuing a specialized discipline, most of whom are not anthropologists.

Anthropology is always heterogeneous and appears to have a "problem" of bringing disparate interests together until it is realized that anthropology exists only because it has already "solved" this "problem."

Finally, anthropology is likely to exist as a discipline as long as linguists, folklorists, archeologists, biologists, geographers, historians, *and any other specialists* find meaning enough in the whole study of man to maintain their intercommunication.

These propositions are in the following pages only expanded and documented.

The Present Heterogeneity of Subject matter Is Part of the Original Tradition of Anthropology

"Les principaux éléments qui servent à distinguer les races humaines sont: *l'organisation physique, le caractère intellectuel et moral, les langues et les traditions historiques;* ces éléments divers n'ont pas encore été étudiés de manière à constituer sur ses véritables bases la science de l'Ethnologie. C'est afin d'y parvenir par une suite d'observations, et d'établir quelles sont en réalité les différentes races humaines, que s'est formée à Paris la *Société Ethnologique.*" [1]

The men who met in Paris in 1839 to form the first anthropological (then called ethnological) society with the purpose stated above included persons interested in what we call today ethnology, folklore, linguistics, physical anthropology, and archeology. Papers on all of these subjects were read. The society also prepared the first "Instructions for travellers" which is directly antecedent to the later (British) "Notes and Queries," including the following main headings:

I.—Des Caractères Physiques.
II.—De la Linguistique.
III.—De la Vie Individuelle et de Famille.
IV.—De la Vie Sociale.
V.—Des Rapports des Naturels avec les Peuples Étrangers.
VI.—De la Religion.
VII.—Des Rapports des Naturels avec les Conditions Extérieures.
VIII.—Traditions Historiques, Révolutions Politiques et Antiquités.[2]

The London Ethnological Society, organized in 1843, followed the same pattern—indeed, translated the above "Manual of Ethnological Inquiry"[3]—and as years passed maintained this variety of interest. Thus among papers read before this society in 1854 were the following:

On the Demigods, Daemonia, Superstitions, and Languages of Australia. By W. A. Miles, Esq.

Observations on the Stature, Weight, &c., of the New Zealanders. By A. S. Thomson, M. D., Surgeon 58th Regiment.

Observations on the History of the Incas of Peru, and on the Indians of South Peru. By W. Bollaert, F.R.G.S.

On the Romanish Languages of Switzerland and the Tyrol. By Dr. William Freund.

On a Reported Infecundity of the Gins of Australia. By T. R. Heywood Thomson, M. D.

On the Phonology and Orthography of the Zulu Language and its Kindred Dialects. By Rev. Lewis Grout.[4]

The same variety can be found in the journals of the anthropological societies in London and Paris in the early 1860's.[5] The following articles, for example, are among those appearing in volume 1 (1863) of the *Anthropological Review* (London):

Wild Men and Beast Children. By E. Burnet Tylor, F.A.S.L.

On the Tribes of Loreto, in Northern Peru. By Professor Raimondi. Translated from the Spanish by William Bollaert, F.A.S.L.

On the Science of Language. By Richard Stephen Charnock, Esq., F.S.A., F.R.G.S., F.A.S.L.

On the Deformations of the Human Cranium, Supposed to be Produced by Mechanical Means. By the late Robert Knox, M. D.

The Abbeville Jaw. By M. de Quatrefages. Translated by George Frederick Rolph, Esq.[6]

The study of "humanity, considered not only in itself but in its relation to the rest of nature" from its very inception thus conceived its scope to include, in the words of Broca (1863, pp. 278–279), the "aptitudes and manners . . . blood and language" of the human races, as well as "the first traces of man's appearance on the earth," and "the most ancient remains of his industry."

---

[1] Mémoires de la Société Ethnologique, 1841, p. iii.

[2] *Ibid.*, pp. vii-xiv.

[3] *Journal of the Ethnological Society of London,* 1854, pp. 193–208.

[4] *Ibid.*, pp. 4–247.

[5] *Memoirs read before the Anthropological Society of London,* 1863, pp. 1–524.

[6] *Anthropological Review,* 1863, pp. 21–491.

Anthropologists Have Always Tended to Be "Self-Selected" from among Their Fellows in Special Disciplines Which Themselves Continue Independent of Anthropology

"As the solid foundations of geology could not be laid until some other sciences were well advanced, so the solid foundations of ethnology required an advanced state at least of anatomy, physiology, philology, and archaeology."

"The distinction of races being admitted, an immense field for investigation opened at once . . . it was first necessary to study the influence of external conditions, such as climate, alimentation, mode of life, etc., on the human organism; to inquire how far these different agents were capable of modifying the individual or the race; and within what limits the laws of heredity and atavism maintained these varieties. It was then requisite to determine the filiation of the peoples, to trace the course of their migrations and intermixture, to interrogate their monuments, history, and traditions; to follow them up beyond the historical period, so as to arrive at their cradle. All these were entirely new questions and new problems, which until then had not been put to science; and these multiplied and unlimited investigations, which require the simultaneous concurrence of zoology, anatomy, physiology, philology, and palaeontology, must converge to constitute the science of man, or anthropology.

"Such is the mission bequeathed by the eighteenth century to our own. But who, sixty years ago, would have tried to carry out this programme would have spent his life in useless efforts. . . . Comparative philology just made its *début;* archaeology had as yet not extended its domain beyond the limits of Western Europe; and palaeontology and geology, these twin sisters, were as yet scarcely able to walk. . . .

"To found anthropology upon its veritable basis was then impossible. . . .

"In this incomparable half century, which has seen so many discoveries, which has explained so many enigmas, which has transmitted to us precious documents, as to the past of humanity; the study of human races has become enriched with an enormous mass of facts. . . . These isolated researches in the various branches of the science of man, have, no doubt, been fruitful. Many particular questions have been better fathomed by being treated exclusively, and the number of demonstrated facts was considerably increased thereby; but this was not sufficient for the formation of a fascicle of methodically connected branches, which alone in the present day can constitute a science. The various branches of anthropology were already in existence, but anthropology itself, towards which they were to converge, did not yet exist, and to give it organization and life, more was required than individual efforts."

The first statement was made by Richard Cull to the Ethnological Society of London (1854, p. 111), the second by Paul Broca (1863, pp. 275–277) to the Anthropological Society of Paris in 1862, and they tell a story which must have a more personal side.

In 1839 in Paris and in London alike thrived geographic, philological, antiquarian, and medical societies. Geographers were meeting among themselves to exchange information and ideas, and were publishing a journal. Likewise philologists, and antiquarians, and anatomists. Some small number of persons from each of these groups came together (with others who were generally interested in customs and folklore and the like) to form the ethnological societies, and later the anthropological societies, in the two capitals. They wished to communicate not only with fellow specialists in their own disciplines of geography, archeology, philology, and anatomy; but also with one another. Anatomists mutually shared anatomical interests; philologists philological interests; etc. The particular anatomists and philologists (and others) who organized the anthropological societies clearly had in addition a more general interest in pursuit of which they entered into communication. This was the origin and *raison d'être* of anthropology. The specialized societies did not of course become absorbed; most anatomists, philologists, and archeologists did not become anthropologists, and even those who did usually continued to meet with and publish for their special colleagues as well.

The specialized societies and journals thus grew and flourished even as the anthropological societies did. The original pattern has characterized anthropology through all the years. Some but not all anatomists or physiologists, linguists, folklorists, and archeologists have always been, or became, anthropologists as well as anatomists, physiologists, linguists, etc. Thus today as always most anthropologists look two ways; thus also all of the special societies have minority groups of anthropologists—"anthropological" linguists, or folklorists, or anatomists. In some cases these anthropological minorities have organized special societies, like the American Association of Physical Anthropologists, or the Society for American Archaeology. But the pattern of attraction of persons to anthropology from other disciplines—including the widest variety in the social and biological sciences and the humanities, as well as the original and traditional ones—continues always. Anthropology for at least half its life has also been producing its own anthropologists, most of whom (in the tradition, but with labor pains) are also specialists in one of the related fields; but anthropologists continue also to be self-selected from other fields, and naturalized.

The Attraction to Anthropology Is to the Breadth of its Charge to Study Man in All His Manifold Aspects

"To describe and classify the actual races, to point out their analogies and differences, to study their aptitudes and manners, to determine their filiation by blood and language, is no doubt to run over much ground in the field of anthropology; but there remain higher and more general questions. All the human races, in spite of their diversity, form a great whole, a great harmonic group, and it is important to examine the group in its *ensemble*, to determine its position in the series of beings, its relations with other groups of nature, its common characters, whether in the anatomical and physiological, or in the intellectual order. It is not less necessary to study the laws which preside in maintaining or changing these characters, . . . Finally, in a more elevated sphere, and without venturing to attain the regions which conceal the problem of origin (a fascinating and, perhaps, insoluble problem), our science eagerly searches for the first traces of man's appearance on earth, it studies the most ancient remains of his industry, and gradually descending from incalculably remote epochs towards the historical period, it follows humanity in its slow evolution, in the successive stages of its progress, in its inventions, in its struggles with the organic world, and its conquests over nature. . . .

"Henceforth general anthropology and ethnology form but one science,—the most noble of all sciences, since it has for its object humanity, considered not only in itself but in its relations to the rest of nature."

This statement, again from Broca's speech (1863, pp. 278–279) to the Paris anthropologists (it was the occasion of the Society's fourth anniversary), was translated for the journal of the London society and clearly spoke for all anthropologists of the breadth of their discipline. It has become no less comprehensive with the passage of time. In a review (1953, p. 38) of the Symposium volumes, Ralph Linton describes the problem for anthropology as nothing less than "man, in all his manifold aspects." What less could have brought and kept together so great a variety of interests? Man as an animal, as a population, as a species; his behavior and his culture, and the behavior of his culture; the origin, characteristics, and distribution of the varieties of man, his language, social forms, ideas; the genetics, prehistory and history, and the laws of history, which explain all of these in all time over the whole earth; comparative anatomy, personality, religion and ethics, law, sociology, and science; national characteristics, acculturation, socialization. All these and whatever else may become relevant is the problem anthropologists have chosen.

The original anatomists, philologists, geographers, antiquarians came evenings to listen each to the others. It was their interest in the all-inclusive problem that drew them, and that made all-inclusiveness a virtue to be felt and extolled. The anatomists (for example) came to read papers on craniometry to philologists and to students of customs, and to listen to papers on chipped-stone industries and grammar and folklore. The first anthropologists must have contributed breadth and a high threshold of tolerance for a variety of subjects and of techniques for studying them. They established these as values for which anthropology ever since has tended to select. The integration of anthropology inheres both in the general concern for the problem of man and in the continuing intercommunication of persons who share and value the inclusiveness of this interest.

Anthropology Continues to Attract Others Partly by Reaching Out to New Sources of Knowledge, Method, and Theory

> "We look upon Anthropology as the Science of Mankind. We shall therefore treat of every thing that will throw light on the physical or psychological history of Man. It will be essentially our object to trace the primitive history of Man. But in doing this we require the aid of the geologist, archaeologist, anatomist, physiologist, psychologist, and philologist. It is, therefore, nearly impossible in the present imperfect state of our science to be master of all these subjects. The time also has, perhaps, not yet come when the different sciences can all be brought to bear on the history of mankind."

Before and after James Hunt (1863, p. 11) proclaimed in these words the program of the new Anthropological Society of London, anthropology has characteristically assumed that its working tools would come from wherever they happen to be developed. Whether a "law of uniformity" from geology, a Freudian model, or a dating technique from chemistry, anthropologists have freely adopted, reinterpreted, and made their own whatever appeared useful to their varied problems.

It is because they are wanted and needed that people are drawn into anthropology. But if they are not so drawn in, their ideas still are. The eclecticism of anthropology appears to add to its heterogeneity, frequently by adding whole fields (like culture-and-personality), but of course all that are added are new answers to the heterogeneity already residing in the questions. Anthropology always has been as broad in conception as it is possible to be; in wandering correspondingly widely for its data and tools, it absorbs in the tradition of the discipline those new men with special ideas who accept the breadth of anthropology. Thus is provided the growth in resources to cope with the always deepening questions.

Anthropology Is Bounded Only by the Limits of What Anthropologists Do and Use; and Anthropologists Are Those Who Intercommunicate in the Continuum Founded in 1839.

With subject matter nearly unlimited, and high value placed on open horizons, is it possible to speak of anthropology as a "discipline" at all? Can one speak of the "integration" of a boundless universe? It would appear to be a perplexing problem that on the one hand the broad study of man includes all science and knowledge that may be or may become pertinent, and that on the other the community of anthropologists always has been small. The solution is in the difference between the *ology* and the *ologist.* Any scholar may make a contribution to anthropology; any discovery which illuminates our understanding about man is used by, adopted into anthropology. These discoveries come from any field of knowledge. The discoverer need not be an anthropologist, although he may become one. Thus Willard Libby, the chemist who developed the carbon 14 method of dating archeological material, is not an anthropologist; but he could become one if he were to develop his interest in early man and civilization to the point where he should wish to come into further communication with the archeologists, physical anthropologists, linguists, and ethnologists who share that general interest.

On the other hand, *anything* that an anthropologist does must, in the tradition of the field, be considered anthropology. The anthropologist *is* in intercommunication and *does* share interest in the common problem; but even if he is not and does not, there is no definition that might bar his work. It may turn out that his colleagues in anthropology will not attend or use his work, thus excluding it from the functioning body of "anthropology"; but, since nobody can predict outcomes, this is not an operationally useful test of anthropology. The spirit of the discipline prefers error on the side of expansion to constriction. Hence anthropology is whatever anthropologists do or whatever they use. "An anthropologist" in turn is (again in the tradition of the discipline) anybody who enters into scholarly intercommunication with the community that has existed continuously since the Ethnological Society was formed in Paris in 1839. Anthropologists "born" into the group by a generally recognized course of training are more easily identified but—in the tradition—not more rightfully "anthropologists" than those who are adopted.

The Characteristic Unity of Anthropology Is Demonstrated and Made Manifest within the Context of Areal Studies and Museums

Analysis of a particular geographical area involves besides geographical, botanical, zoological, and other knowledge, the whole complex of anthropological interests. Ethnologists, archeologists, physical anthropologists, and linguists all make complementary contributions to our knowledge of man within the context of any geographic area. Exploration and travel, national interests, and other factors early led to interests in regions. Anthropogeographic theory and field work maintained it among anthropologists. Societies of Americanists, Oceanists, Africanists, etc., have long existed for intercommunication about the anthropology of these areas. Membership of these societies is representative of the whole range of anthropological concern: questions of prehistory, race, social organization, language, culture, are all studied within an area. Such studies have, throughout the history of anthropology, afforded unity and integration to the "science of man." Similarly with museums which use a geographical and natural history base and bring all branches of knowledge to bear on the problems of man (Kroeber, 1953).

Anthropologists Generally Share a Particular Set of Intellectual Preferences and Habits Which Have Historic Roots, Which Distinguish Them from Most "Social Scientists" and Which Are a Basis of Self-Selection to the Group

Among these are, first, the values already referred to as associated with the breadth of the enterprise of studying man from all points of view: the eclecticism; the openness of boundaries to both men and ideas; high tolerance for a variety of subjects and tools. Out of these grows also a tolerance for a certain amount of ambiguity and vagueness. It is not possible to take all aspects of a problem into account at once if one also demands a clear structure.

Perhaps even more important is the desire of anthropologists to stay close to the real world. Having at heart a real problem, anthropologists (like geographers and geologists, historians and zoologists, etc.) from the start implicitly demanded real answers rather than abstract models. They were far indeed from the economists who next door to them in both Paris and London developed elaborate theories based on a model of a non-existent man! Given the choice between trying in vain to solve a real problem for which tools are not available, and abstracting parts for which tools are at hand, the anthropologist generally prefers to worry a whole problem without success than to operate successfully with good tools on something not really there. In this he differs from not only most economists but from most sociologists and psychologists as well. It is a characteristic probably related both to the natural science and natural history background of most early anthropologists and to their deliberate selection of a large and complex problem which they insisted must be attacked from all sides at once. It is also related to the necessities of the field situation in which a lone anthropologist typically faces the wholeness of a society and culture in their ecological setting, where most obviously all things are interdependent and very real.

It is probably an incident and an accident that anthropology became particularly associated (notably in North America) with the social sciences (Kroeber, 1953). Economics, politics, and jurisprudence had developed concurrently with the subjects that came together to form anthropology. None of the anthropological subjects was closely related to these original social sciences, and it appears that, with respect to both people and ideas, anthropology—unlike sociology—was formed quite independently of them. Hume, Mill, and Marx are names common to all the others but not to anthropology; Comte and Spencer are markedly absent from contemporary anthropological journals. The connections between anthropology on the one hand and the central social sciences on the other, however important they may be, are late and different in different countries. Some anthropologists of course always have been close to sociologists, as others have been close to historians or physiologists. Theoretical studies of the evolution of the family —by Bachhofen, McLennan, Morgan—have been a special link; another has been the French group (led by Durkheim) who identify with sociology and social anthropology alike. But although in the 1880's men like Lester Ward and J. W. Powell both were active in the Washington Anthropological Society, the two disciplines generally have been farther apart than university organization leads one to believe.

There were departments of anthropology in American universities as early as departments of sociology, sometimes earlier; but a sociology department where there was no anthropology department often sought an anthropologist to teach its "social origins" material; and eventually there came to be combined departments of sociology and anthropology. Similarly many universities in grouping subjects into larger divisions classified anthropology among the social sciences rather than with the biological sciences or the humanities where the roots of anthropology are at least as strong.

This has led occasionally to an identification (even by anthropologists) that needs correction. In tradition, spirit, and method anthropology is not particularly a social science, and neither administrative convenience nor the need to classify is likely to make it one. Anthropology has a contribution to make to the social sciences—and in the tradition of anthropology it also uses what knowledge and tools they develop—but its best contributions will presumably be "anthropological," stemming from its uniqueness.

Anthropologists Also Share a "Liberal" View of Other Peoples and Cultures Which Puts Them on the Side of the "Underdog" Generally and of Native Peoples Particularly

The original interest in "exotic peoples" is both a cause and a result of the anthropologists' abiding concern with man through all of time and space. Knowing mankind is to know all its varieties. Knowing people means seeing them as people. It happens that anthropology grew up in an age when the moral basis of slavery was being argued hotly and when the colonization of Africa and Asia made the governing of native peoples a public issue. Some of the earliest anthropologists were or had been missionaries; they were particularly concerned with the welfare of the native peoples. The original Société Ethnologique de Paris was formed through the efforts of persons who were members of an anti-slavery, native welfare group known as the Aborigines Protection Association. The Ethnological Society of London later grew out of the same organization. It is therefore not surprising that anthropologists have generally taken the side of the oppressed, hence of native peoples. In turn, interest in the welfare of native peoples doubtless contributed to their becoming and remaining a subject of anthropological study. At the same time, this sort of bias has been a binding philosophic tie among anthropologists and one of the factors in their selection.

The "liberal" unity of anthropology was solidified by an early test, in England. The Ethnological Society of London had been founded in 1843; anatomists, ethnographers, philologists, archeologists, etc., attended the meetings of the society and published articles in its journal. In 1863, however, the Ethnological Society split apart, and the "study of man" in England proceeded for a number of years divided between two bitterly contesting groups, ethnologists and "anthropologists." A superficial examination of their proceedings reveals that the two groups treated the same problems, had similarly diverse compositions, and published similar journals. But the "ethnologists" were anti-slavery; the "anthropologists" split away from them because they were pro-slavery racists! The guiding spirit and first president of the new society was Dr. James Hunt, who wrote (1863b, pp. 10–17), in the first article in the first volume of the memoirs of the society, entitled "On the Negro's Place in Nature":

> ". . . It appears that in the Negro the growth of the brain is sooner arrested than in the European. This premature union of the bones of the skull may give a clue to much of the mental inferiority which is seen in the Negro race. . . . There is no doubt that the Negro brain bears a great resemblance to a European female or child's brain, and thus approaches the ape far more than the European."

Proceeding from "anatomy" to "culture," Hunt quotes (p. 42) one William Bosman to the effect that

> "The Negros are all, without exception, crafty, villainous, and fraudulent, and very seldom to be trusted."

Hunt concludes (p. 52) with the assertion that "the negro belongs to a distinct type," which is "intellectually inferior to the European." Consequently, slavery is perfectly justified (p. 55):

> "Scientific men . . . dare not close their eyes (!) to the clear facts, as to the improvement in mind and body, as well as the general happiness, which is seen in those parts of the world in which the Negro is working in his natural subordination to the European."

Hunt's article (which was reprinted and distributed by pro-slavery groups in America) is only one of many: the "anthropologists" took a polygenist, anti-negro, racist position, in clear contrast to the "ethnologists." The enmity between the groups was bitter: Hunt once termed Thomas Huxley, then the president of the London Ethnological Society, a person suffering from "negromania." The comment of the Manchester *Examiner and Times* probably is an accurate reflection of the general public's conception of "anthropologists":

> "The science is only seven years old, yet its conclusions are already imported into politics. . . . The anthropologists have already arrived at the conclusion that an impassable gulf divides certain races of men; that it is the right of the superior race to do as they want with the inferior." [7]

The rift between "ethnologists" and "anthropologists" was soon healed. The combined societies took the general name anthropology (as later in France where the anthropological society had been founded evidently without respect to a difference in politics); but it rejected the political philosophy of the "anthropologists." Racism, an issue near the origins of anthropology, appears now to have been a short-term aberration from the anthropological tradition, the first of several that have in different localities and times tested the anti-racist "liberalism" that has unified anthropology.

Anthropologists probably also have always been unusually international in their outlook and associations, whether because of the general outlook or because travel is part of the occupation. The members of local anthropological societies were frequently "corresponding fellows" of foreign groups. Translation was an important function of the early societies:

> "It affords me much gratification . . . to announce that . . . the publication of translations of foreign works, is to be followed by our fellow students of Moscow. We must all rejoice that such is to be the case. Let us never forget that there is but one science of anthropology, although there are many languages in which that science is enunciated . . . Our Madrid Associates, although they have only just commenced

---

[7] *Manchester Examiner and Times*, November 3, 1866. Quoted in "The Manchester Anthropological Society," 1867, p. 27.

their sittings, have already three hundred members enrolled. The first number of their journal is shortly expected to appear; and altogether there is an amount of activity and zeal in this young society, which is both gratifying and encouraging to us.

"Our fellow students across the Channel acknowledge and remind us of the fact, that our opportunities for the study of anthropology are far greater than their own. The large colonial possessions of this country bring us into close contact with nearly every existing race of man. This has been going on for generations, yet to our national shame let it be said, our anthropological museums are far inferior to those of the French, or even of the Danes."[8]

This was spoken in London in 1866. But intimate international communication began with the formation of the first three ethnological societies in Paris, New York, and London between 1839 and 1843. All the records evidence warm and frequent mutual intercourse among anthropologists all over the world, which has continued over the years through International Congresses, in the organization of which anthropologists have always led, and personal visits, as well as through the literature. Recent years have added international committees and exchange scholarships, fellowships, and professorships.

MEASURES OF INTEGRATION

It follows from the thesis developed here that the question of whether anthropology is becoming more or less integrated resolves into three:

1. Among scholars interested in one or another branch of the anthropological study of man, is the proportion increasing or decreasing of those who identify with the traditional scope of anthropology as first enunciated in 1839?
2. Among those who do so identify, is intercommunication increasing or decreasing relative to ties with scholars outside anthropology?
3. Are the traditional values of the identifying group being held with increased or decreased firmness?

Development and application of means to answer these questions is rendered more difficult by differences in terminology and organization from country to country. If we take the single term "anthropology" to stand for the whole of the tradition that was founded in Paris in 1839, may we assume that anthropology exists everywhere and only where the term is used in this sense, and where academic institutions are organized around it? The best available source for data on terminology and organization is the recent *International Directory of Anthropological Institutions* (Thomas and Pikelis, eds., 1953), and this discussion is based in large part on data it supplies.

The information in the *Directory* is not easily interpreted, and the situation is complex. If we are not too far wrong, anthropology is generally used to include physical anthropology and at least some branches of cultural anthropology in England and Ireland and all the nations of the commonwealth, and the colonies; the United States; Latin America; Indonesia; Southeast Asia; the Philippines; China; and the Netherlands and Belgium.

On the other hand the term anthropology means physical anthropology (and there is no inclusive term) in all the continent of Europe except Holland, Belgium, and France; in the Near East, and in Japan.

France appears to be variable in the usage of its terms.

One cannot assume that an over-all term for the various anthropological fields means that they are integrated, or that lack of a term means they are not. In Scandinavia it appears that the separate fields are individually well developed, but institutionally very separate with little direct communication between their practitioners. It appears that anthropology in the present definition neither *started* in Scandinavia of its own accord, nor did Scandinavians accept the pattern of the French, English, and Americans. In this case the lack of a word does mean something: that the separate sciences never entered into union. "Integration" of anthropology does not exist, and never has, because there is no "anthropology."

On the other hand, it is certain that many of the places that use the term "anthropology" do not in fact practice anthropology, only because the separate fields are not sufficiently staffed to make intercommunication meaningful. The term and the ideal have diffused, and they await the anthropologists.

---

[8] *Anthropological Review*, 1866, p. lxxv.

Germany is a case like Scandinavia in which all fields of anthropology developed well—some earlier than elsewhere—but, unlike Scandinavia, most of them always have been in close intercommunication. Yet there is no common term.

France and England, the centers of the original integration, today present a curious contrast. In France the terminology evidently never became as fixed as in England; both meanings of the term "anthropology" seem to have been competing. But anthropology appears to have stayed together rather firmly. In England, on the other hand, there appears to be no doubt about the terminology: "anthropology" subsumes physical anthropology, archeology, ethnology, etc., but the bonds show more signs of dissolving there than anywhere else. In France (as in the United States) the unity of anthropology seems to be valued; in England some descendants of Tylor speak and write as though there has already been a happy divorce.

Japan appears to have had a unitary anthropology once, to have lost it (though the specialties continue strong) and to be making attempts to bring it back. Here the *value* of general anthropology seems to exist, with developed specialties which are not joined into anthropology.

Differences in terms thus not only confuse issues, but may not mean what they seem to. The integration of anthropology is probably greater over the world than would appear to be the case if one judged only by the presence or absence of a general term. And *to the degree* that the term may be important one would have to conclude that integration is increasing rather than decreasing, since there is nowhere that the word anthropology is being restricted in meaning, while the contrary continually occurs with international communication.

Nor can the development of new specialisms, like culture-and-personality in the United States or an organized social anthropology in England, be counted a sign of disintegration. Indeed one may reason that as long as the new specialists remain in communication with other anthropologists they strengthen anthropology. One can argue that if a constituent element—linguistics, for example—should drop out of anthropology it would be a sign of disintegration; but not then that if some psychology attaches itself *to* anthropology it is also a sign of distintegration (although of course any change is a disturbance that may *threaten* the integration). The question with a new addition is whether it will *become* integrated into anthropology; and if it does, anthropology becomes in some sense more rather than less integrated.

Nor can one argue that added specialties reduce the possibility of necessary intercommunication unless one assumes that the necessary communication must be on a specialized or technical level, or that each kind of anthropologist must communicate with every other kind. Neither assumption is in the tradition of anthropology. There is no reason to believe that physical anthropologists ever troubled to learn how to manipulate morphemes properly, or archeologists to interpret kinship structures. A division of labor is not only appropriate but helpful in integrating an organism or society! What is required as a minimum is enough general understanding to engender respect, and perhaps to help learn how what that is new may relate to something known. Each anthropologist will be in technical communication with some others, but hardly with all. But if A understands B and C; and B understands C and D; and C understands A and D; and D understands A and B, surely a firm functional integration is established. At some point in his career, a student should have the opportunity to learn more about more specialties than his teachers (by that time) are expert in, to give him both a wide basis of selection and (perhaps) a respect for the techniques of other anthropologists. Another genuine function may be to permit him to see if, in the anthropological tradition, he can tolerate the variety of specialties—and specialists!

But neither the fact that there is far more knowledge than any anthropologist can master, nor that additions at the border add new varieties is a relevant measure of integration.

To see if integration is increasing or decreasing it is necessary first to ask whether (for example) more prehistorians are communicating more than before with other anthropologists and less with other prehistorians or geologists (for example), or the reverse. Intercommunication is exceedingly difficult to document. While it is sometimes clear that it is taking place—as in anthropological congresses and symposia—it is difficult to assert with certainty when meaningful relations are *not* taking place. Surely no single measure of communication will be adequate. Some of the following may prove useful:

(a) The publication of journals inclusive of many anthropological interests. "General" publications indicate both harmony of interest and concern with the problems and progress of the several major anthropological areas, and also are direct measures of communication. Presumably, linguists and archeologists both subscribe to a general journal for some reason other than to read articles on linguistics or archeology respectively. In the United States and Britain there flourish journals that cover the field: the *American Anthropologist, Southwestern Journal of Anthropology,* the *Anthropological Quarterly,* the *Journal of the Royal Anthropological Institute,* and *Man.* In view of the negative value expressed by some British anthropologists, it is interesting that the *J.R.A.I.*, which most of them evidently support, publishes at least as wide a variety as does the *American Anthropologist.* During the years 1943–53 the following proportions of articles appeared:

Ethnology—39%
Linguistics—4%
Physical anthropology—18%
Archeology—12%
Other—26%

(b) The prevalence of subscribers or readers of specialized journals in other specialties, whether or not there is a unified journal. In countries where no unified journal exists, it is particularly important to know the range of subscriptions to the various journals, since the absence of a general journal does not in itself indicate any lack of intercommunication. Although there is no unified journal in Germany, for example, it may be that as many German anthropologists read as many or more articles relating to all fields as in the United States.

(c) Membership in different societies, and particularly attendance at meetings. How many social anthropologists belong to linguistic societies? How many linguists attend meetings of archeological groups? And so on.

(d) The degree of international exchange of journals. While no "general" publication may be issued in a particular country, scholars may be reading the general and specialized publications of other countries. A Swedish archeologist reading the *J.R.A.I.* may not only read articles on other aspects of anthropology, but the archeological articles he reads will bear the imprint of the traditional integration of English anthropology.

(e) Area interests. Growth of journals and societies on areas—Africa, Oceania, America, etc.—since these cover the whole range of anthropology, measure increase in intercommunication. Since these journals and societies are international, their presence mitigates the disparateness of fields in countries (like Scandinavia) where anthropology is not locally integrated. Indeed the indirect effects of international communications are all necessarily in the direction of the integration of anthropology.

(f) Similar ties of anthropologists to groups outside the anthropological tradition. The number of anthropologists who read sociological journals, and who attend the meetings of sociologists—and similarly at other borders—measure the relative ties of anthropologists within and outside the traditionally intercommunicating group.

(g) The organization of university departments which teach subjects relating to "man and his works." The number and influence of general as compared with specialized courses; the generality of the requirements, the varying influences on anthropology students, etc., are all relevant to trends toward or away from the integration of anthropology. Presumably, students who learn a variety of subject matter will maintain an interest in the whole field; departments of anthropology which possess the full range of inquiry presumably interrelate the various specialists within the department itself.

(h) The publication of general, inclusive texts in anthropology. Integration may not explain increased publication of general books, especially textbooks, but they nevertheless promote it. It is interesting to note that within a few months one publisher has produced three books in anthropology all of which cover the several fields.[9] However one looks at the increase in number of textbooks, they and the courses in general anthropology are clear indications that anthropology as a single discipline shows every sign of increasing its followers.

CONCLUSION

These few measures and others applied over a span of time and in different countries, might give a basis for calculation and prediction. Meanwhile, thoughtful consideration of what is happening leads to the suggestion that, except possibly in Britain (where the contrary is far from definite), anthropology is becoming more rather than less integrated.

The danger is not in increasing numbers, or adding specialisms, or permitting free access to our ranks; but rather the contrary is true. If anthropology in the United States disintegrates it will most likely be because increasing professionalization leads to restrictive definitions of anthropology or anthropologists, and to the counting out of some activities—scientific, applied, or action-oriented. For the survival of a society and culture depends upon the maintenance and expression of the set of values around which it is organized. An essential value in the case of anthropology is its historic reaching for new ideas, tools, and subject matters that may further the study of man.

---

[9] C. S. Coon's *The Story of Man* was published November 8, 1954, by Alfred A. Knopf; Ralph Linton's *The Tree of Culture* and M. J. Herskovits' *Cultural Anthropology* were published in January, 1955, by the same publisher.

REFERENCES

Anonymous
1854 "A Manual of Ethnological Inquiry," *Journal of the Ethnological Society of London*, Vol. III, pp. 193–208.
1867 "The Manchester Anthropological Society," *Anthropological Review*, Vol. V, No. XVI, January, pp. 1–27. London: Trübner and Company.

ANTHROPOLOGICAL REVIEW
1863 Vol. I. London: Trübner and Company. 8 Vols. (1863–1870).
1866 Vol. IV. London: Trübner and Company. 8 Vols. (1863–1870).

BENNETT, JOHN
1953 "Review of *An Appraisal of Anthropology Today*," *Science*, Vol. 118, pp. 221–222.

BEALS, RALPH and HOIJER, HARRY
1953 *An Introduction to Anthropology*. New York: Macmillan. 658 pp.

BIDNEY, DAVID
1953 *Theoretical Anthropology*. New York: Columbia University Press. 506 pp.

BOAS, FRANZ
1938 *General Anthropology*. Boston and New York: D. C. Heath and Company. 718 pp.

BROCA, PAUL
1863 "History of the Proceedings of the Anthropological Society of Paris," *Anthropological Review*, Vol. I, No. 2, pp. 274–310.

CHAPPLE, ELIOT and COON, CARLETON
1942 *Principles of Anthropology*. New York: H. Holt and Company. 718 pp.

COON, CARLETON
1948 *A Reader in General Anthropology*. New York: H. Holt and Company. 624 pp.
1954 *The Story of Man*. New York: Alfred A. Knopf. 437 pp.

CULL, RICHARD
1854 "Remarks on the Nature, Objects, and Evidences of Ethnological Science," *Journal of the Ethnological Society of London*, Vol. III, pp. 103–111.

FORDE, DARYLL
1953 "Review of *Anthropology Today*," *Nature*, Vol. 172, December 5, p. 1016.

GILLIN, JOHN
1948 *The Ways of Men*. New York: D. Appleton-Century. 649 pp.

GOLDENWEISER, ALEXANDER
1922 *Early Civilization*. New York: Alfred A. Knopf. 428 pp.
1937 *Anthropology*. New York: F. S. Crofts and Company. 550 pp.

HERSKOVITS, MELVILLE J.
1948 *Man and His Works*. New York: Alfred A. Knopf. 678 pp.
1955 *Cultural Anthropology*. New York: Alfred A. Knopf. 569 pp.

HUNT, JAMES
1863a "On the Study of Anthropology," *Anthropological Review*, Vol. I, No. 1, pp. 1–20.
1863b "On the Negro's Place in Nature," *Memoirs read before the Anthropological Society of London*, Vol. I, pp. 1–63.

J. E. N.
1953 "Review of *Anthropology Today* and *An Appraisal of Anthropology Today*," *Sociology and Social Research*, pp. 347–348.

JOURNAL OF THE ETHNOLOGICAL SOCIETY OF LONDON
1854 Vol. III. London: W. Watts. 296 pp.

KLUCKHOHN, CLYDE
1949 *Mirror for Man*. New York: Whittlesey House. 313 pp.

KROEBER, ALFRED
1923 *Anthropology*. New York: Harcourt, Brace and Company. 523 pp.
1953 "The Place of Anthropology in Universities," *American Anthropologist*, Vol. 56, No. 5, October, pp. 764–767.

KROEBER, ALFRED L. and others
1953 *Anthropology Today*. Chicago: University of Chicago Press. 966 pp.

LESSA, WILLIAM
1953 "Review of *Anthropology Today*," *Scientific Monthly*, Vol. 77, p. 357.

LEWIS, MYRON F.
1953 "Review of *Anthropology Today*," *Personnel and Guidance Journal*, Vol. 31, December, p. 174.

LINTON, RALPH
1936 *The Study of Man*. New York: D. Appleton-Century Company. 503 pp.
1953 "Review of *Anthropology Today*," *Saturday Review of Literature*, Vol. 35, April 4, pp. 38–39.
1955 *The Tree of Culture*. New York: Alfred A. Knopf. 692 pp.

LOWIE, ROBERT
1934 *An Introduction to Cultural Anthropology*. New York: Farrar and Rinehart. 365 pp.

MALKIN, BORYS
1954 "Review of *Anthropology Today* and *An Appraisal of Anthropology Today*," *Pacific Discovery*, Vol. 6, May–June, p. 28.

MARETT, R.
1912 *Anthropology*. New York: H. Holt and Company. 256 pp.

MEMOIRS READ BEFORE THE ANTHROPOLOGICAL SOCIETY OF LONDON
1863–64 Vol. I. London: Trübner and Company. 533 pp.
1865–66 Vol. II. London: Trübner and Company. 462 pp.

MÉMOIRES DE LA SOCIÉTÉ ETHNOLOGIQUE
1841 Vol. I. Paris: Librairie Orientale de Mme. Ve Dondey-Dupré. 296 pp.

TAX, SOL *et al.* (eds.)
1953 *An Appraisal of Anthropology Today*. Chicago: University of Chicago Press. 395 pp.

THOMAS, WILLIAM L. JR. and PIKELIS, ANNA M.
1953 *International Directory of Anthropological Institutions.* New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 468 pp.

TITIEV, MISCHA
1954 *The Science of Man.* New York: H. Holt and Company. 489 pp.

TYLOR, EDWARD
1904 *Anthropology.* New York: D. Appleton-Century. 448 pp.

WALLIS, WILSON
1926 *An Introduction to Anthropology.* New York and London: Harper and Brothers. 520 pp.
1954 "Review of *Anthropology Today* and *An Appraisal of Anthropology Today*," *American Sociological Review*, Vol. 19, February, p. 99.

Toward Communication between Sociology and Anthropology

JOHN W. BENNETT AND KURT H. WOLFF[1]

Dr. Bennett is an Associate Professor in the Department of Sociology and Anthropology of The Ohio State University. He has done research in rural America and in Japan, and archeological research in the Southwest and the Ohio Valley. He was recently Chief of the Public Opinion and Sociological Research Division of the Japan Occupation, and since his return has been director of a research program, "Research in Japanese Social Relations."

Dr. Wolff likewise is an Associate Professor in the Department of Sociology and Anthropology of The Ohio State University. He has done research in the American Southwest and in Germany, work in the sociology of knowledge, and in social theory. He is directing a research program on German-American postwar problems.

THE purpose of this chapter is to explore the intellectual and professional relationships between anthropology and sociology, so that the chances of their reciprocal communication can better be estimated. The distinction between intellectual and professional relations is often overlooked. While intellectually sociology and anthropology are commonly viewed as "sister" sciences, it is equally common to find anthropologists and sociologists making large claims for the professional distinctness of their fields: the fields are close or far apart, according to the aspects of their relationships which are perceived. Furthermore, intellectual divisions within each of them may be as deep and bitter as between them. Some social anthropologists and rural sociologists are far closer to one another than either is to other branches of his discipline, and some archeologists have much more in common with geologists than with cultural anthropologists.

On the whole, however, sociologists and anthropologists maintain considerable separate unity. They behave somewhat like political parties: they possess professionalized bodies and ideologies, are organized for the protection of their members and prerogatives, and carry on propaganda to please the voters.

In this chapter, we first will review some aspects of the histories of sociology and anthropology in an effort, secondly, to understand certain differences between the two fields. Thirdly, we will note the emergence of an area of rapprochement—structural-functional research and theory. The fourth and final section is a pilot study of the professional relations between sociologists and anthropologists in the "joint' departments.

---

[1] The chapter was originally assigned to the senior author alone. Since its topic, however, has for several years been an intimate concern to both writers, and has figured in their conversations and teaching, they have seized the opportunity to speak jointly. They share the responsibility for the first three sections; the senior author alone is responsible for the fourth. The writers' collaboration problem has a certain fitness because of the fessional experiences and intellectual convictions. Bennett, while trained as an anthropologist, has done research in fields and subjects ordinarily viewed as "sociological"; Wolff, though identified as a sociologist, has done research and writing of an "anthropological" character. Both writers wish to thank David L. Sills, of the Bureau of Applied Social Research, for valuable criticisms.

HISTORICAL BACKGROUNDS OF THE RELATIONS OF SOCIOLOGY AND ANTHROPOLOGY

Anthropology and sociology, though both "social sciences" in the broad sense, have had different histories, objectives, and approaches. Sociology[2] arose in the seventeenth century in opposition to the inextricable mixture of ethical and legal principles in the doctrine of Natural Law. This expression of an empirical attitude was an attempt, ultimately successful in certain respects, to distinguish between important elements of social behavior and outlook characteristic of Western society. The preoccupation with Western society constitutes the major unifying theme for problem, research, and theory of sociology throughout its history. It is reflected in many otherwise heterogeneous instances: in Hobbes' psychological approach to European politics; in Montesquieu's "structural-functional" examination of laws; in Comte's "positivism" set against the "negative" lingering-on of the French Revolution; in Spencer's elaborate doctrine of progress with its apologia for Victorian England; in Marx's concern with the redemption of industrial society; in Durkheim's preoccupation with its anomie; in Weber's puzzlement over its essential features—capitalism, rationalization, bureaucracy; or in the involvement of American sociology with "social problems" such as racism, immigration, and urbanization.

The rise of "scientific sociology" in the present century—a signal expression of it is Pareto—has modified somewhat this major concern with the West. Emphasis has shifted toward general laws of social relationships, processes, and forms, and away from involvement with the nature of Western society. But objectives have exceeded accomplishments, for sociologists have continued to focus, as a source of both data and motivation, on Western society or portions of it. The injection of "science" contains an element of disguise and confusion: while professing to search for general laws, the sociologist continues indulging his concern with his own society, but as a "scientist," does not admit it. The positivistic phase of sociology thus belies the historical mission of the field: an empirical analysis of the nature and future of the Western world.

Anthropology,[3] on the other hand, arises from travel, exploration, missionary work, and the pan-human doctrines of biological evolution and cultural history. From the very inception, anthropologists have been preoccupied with the exotic, the different, with an inventory of non-Western societies. Examples are the great ethnological compilations of Klemm and Waitz; Tylor's evolutionary portrayals of human customs; the broad sweep of Frazer's study of ceremonial practices; the universalistic historical approach of Viennese ethnology; or the world-wide operations of the British colonial anthropologists. In American anthropology, the study of communities and culture patterns in the United States is relatively new; for generations the word "Americans" meant North- and South-American Indians and their Asian antecedents.

This world perspective also has extended to anthropology's professional organization. American anthropologists are more nearly members of a world community of scholars than are their colleagues in sociology, although the recent establishment of the International Sociological Association may lead to some change. Communication and exchange between them and European and Asian men in the field have been fluent; the knowledge of different national "schools" has been an intimate part of the equipment of every graduate. While the sociologists, more than they, have been concerned with current Western problems and events—racism, depressions, mass communication, immigration—it was the anthropologists who pioneered a formal manifesto on "human rights" in the postwar world.[4]

---

[2] Salomon, n.d., esp. Abstract I, p. 1; Mannheim, 1952, pp. 139 ff.

[3] Haddon, 1934; Lowie, 1937; Penniman, 1952; Honigsheim, 1942; Dieserud, 1908; Mitra, 1933.

[4] Kluckhohn, C. *et al.*, 1947. Note also Linton, 1945, title of book and introduction.

But anthropologists, like sociologists, have been caught up in the scientific movement of the twentieth century. With the rigorous classificatory emphases of Boas, the elevation of the idea of culture in the 1920's to a "scientific" concept (Murdock, 1932), and the insistence of theorists like Radcliffe-Brown on a "systematic science" of anthropology (borrowed from Durkheim), the discipline has sought to clothe its findings in the language of scientific method. This—more consistently perhaps than in the case of modern sociology, because anthropology has been concerned with many societies—has meant a renewed emphasis upon general statements or laws, upon concepts applicable to human phenomena everywhere. Yet, "scientific" rigor of a descriptive variety has to some extent been paid for by loss in color and texture. The concentration on "facts"—the belief that by taking a resolutely objective view of man one merely had to wait until materials sorted themselves into theoretical generalizations—has produced much "aimless and enthusiastic botanizing."[5] Many ethnologists have done for primitive cultures what many statistics-conscious sociologists have done for American society: produced materials without much sense of problem.

The principal saving grace from this empiricist threat to anthropology has been the technique of direct communication and interaction with the people under study (Richards, 1939). Recent and contemporary sociologists, studying a more familiar world of "self-evident" attitudes, have typically found less need to interact with their subjects. Moreover, the anthropologist, conscious of his task to interpret the exotic to his Western audience, has ordinarily been less concerned with large theoretical schemes than with detailed portrayals of his topics. To some extent, such portrayals must be made, not in Western terms, but in terms of the cultures studied. Anthropology has excelled in grasping those aspects of human existence which set men off from one another and are meaningful because of their particular quality or uniqueness. From a patchwork of such revelations of the unique, it has hoped to piece together a universal picture of man; and a set of concepts, like "culture pattern," which it has evolved, promise well as tools for constructing such an image. In this particular sense, anthropology has been more "scientific" than sociology. In Murdock's terms (1954, p. 22), it studies patterned behavior; sociology, the unpatterned. The Yale cross-cultural studies represent a signal attempt at a systematic comparative ordering of data on the societies of the world (Murdock, 1949, 1950), although some sociologists would not accept this particular approach as "scientific," preferring to see it as "descriptive" or accumulative. A "scientific" approach in their eyes would consist of the analysis of dynamic situations of human relations, anywhere, anytime. It is all a matter of how one defines "scientific."

From an institutional standpoint, American anthropology has lagged behind sociology in establishing itself as an academic subject, even though it found very early acceptance in museums and research institutes, and the beginnings of the two disciplines are roughly contemporaneous.[6] (The reverse is true for England, where sociology is largely replaced by social anthropology.) Today, sociology is much more widely taught, and has many more departments and periodical outlets, than anthropology. Perhaps, after all, sociology is the study of our own society, and this may be more appealing than research into the Bongo-Bongo. The different foci of the two fields are reflected in their course offerings: aside from introductory courses, anthropology most frequently teaches areal ethnology, while sociology concentrates on "social problems."[7]

Communication between the two disciplines with respect to subject matter appears to be more common in research than in teaching. "Structural-functional" studies of world areas are engaged in by sociologists often in company with anthropologists (Steward, 1950), and the latter are busily beginning to study modern societies and American communities.[8] Methodologically, there seems to be less of a tendency toward rapprochement. In 1927, Edward Sapir expected sociology to be enriched by anthropology now that the two had rejected unilinear evolution, thus permitting a more empirical and functional approach to cultural differences and cultural diffusion. Anthropology, he felt, offered sociology a sense of the ubiquity of what now would be called ethnocentrism, and directed sociology's attention to the importance of symbolism and of "rhythmic configurations" in society. The structural-functional, rather than the cultural-historical, suggestions in Sapir's remarks have since appeared as realistic predictions of subsequent developments in sociology: the study of ethnocentrism,[9] the cultivation of functionalism,[10] and the preoccupation with values (symbolism)[11] have come to be among its prominent characteristics and concerns, while the study of diffusion and formal configurations of culture and cultures has hardly taken hold. Although sociologists have borrowed and used the anthropological notion of cultural diversity and have relied upon anthropological materials to provide a kind of comparative color, they have shown little inclination to engage in comparative studies themselves.

---

[5] Shils, 1948, p. 64—although Shils uses the phrase in reference to sociology.

[6] Small, 1924, Chap. XIX; Bernard, L. L. and J., 1943, Part IX; House, 1936, Chap. XVIII; Becker, 1954, esp. pp. 142 ff.

[7] For anthropological courses, see Erminie Voegelin, 1950, Table 5; for sociology, see Kennedy and Kennedy, 1942, esp. Tables 3 and 4. See also Bernard, L. L., 1945.

The volume to which Sapir contributed contains no corresponding chapter on the benefits which might accrue to anthropology from sociology, and this may reflect anthropology's more recent academic standing. In 1927, it was still a small field with only a few departments, and the majority of its professional staff engaged in museum work. However, in the latest symposium on the relations among the behavior sciences, the volume edited by John Gillin, the situation has changed: Murdock (1954) reports on what anthropology might learn from sociology, and Becker (1954) on the inverse opportunity. The latter presents a most useful survey of the interaction between the two disciplines throughout their developments in France, Germany, England, and the United States. But in his recommendations for the present and future, Becker limits himself merely to urging more interdisciplinary research, particularly in "area studies." Here, the anthropologist can contribute the "description of the relatively unique, or idiography," thereby providing "a firm empirical base for whatever conclusions may be reached," while "the sociologist, with his long, albeit neglected, comparative tradition" (Becker, 1954, p. 158), can work together with him. Murdock's chapter in the same volume makes a similar recommendation. He points out (1954, p. 29) that while anthropology "holds most of the resources" of knowledge about human social life, sociology has "most of the tools with which to exploit it," namely methodology; and anthropology is urged to acquire it.

Thus it would appear that neither author has found it possible, in the light of the contemporary relations between the two fields, to describe any very definite points of rapprochement. Their recommendations for collaborative efforts stress the adoption, by both sides, of a more or less "interdisciplinary" outlook. But this means that sociology and anthropology must give up something: their sense of separateness, their distinct and unique problems and concerns. Such a view follows from the assumption, apparently held by Becker and Murdock (and other writers), that the two are distinctly different fields. Those who make this assumption accept the *professional* definitions of the disciplines as "given" and then proceed to discuss possibilities of cooperation.

---

[8] Powdermaker, 1939, 1950; Warner, 1941; Mead, 1951; West, 1945; and others. Courses on American culture are increasing in number among the offerings of anthropology curricula (Erminie Voegelin, 1950).

[9] See the warnings against ethnocentrism in introductory sociology texts, e.g., Cuber, 1951, Chap. 7; or the influential study by Adorno *et al.*, 1950, which, however, makes no explicit reference to the body of anthropological studies of social groups and their centripetal bonds, but relates itself to developments in sociology and social psychology. For a critique of ethnocentrism in anthropology itself, see Embree, 1950.

[10] Merton, 1949, Chap. I; Parsons, 1951. Both authors acknowledge their relationship to Malinowski and other anthropologists.

[11] Esp. Parsons, 1951, particularly Chaps. VIII, IX; also the many sociological efforts to construct scales and other instruments for the measurement of values.

The channels of communication within and between the two disciplines thus appear very mixed at this time. At the risk of considerable error, it would seem reasonable to say that both anthropology and sociology contain within themselves divisions into what one might call, without derogatory implication, the "traditionalists" and the "avant-garde." In anthropology, the "traditionalists" are those who see the field as committed to the classic program of four or five sub-fields, with the heart or nucleus of the science residing in (1) the study of primitive cultures and (2) historical research. This group of anthropologists (who often stress "science" in the nineteenth-century context of classification and description), regardless of their specialization—physical anthropology, ethnology, cultural anthropology, or whatever—see little point in communicating with sociologists; and well they might, since, with their views, there is little need for rapprochement. They are also alarmed at the apparent fragmentation of anthropology in its pursuit of new problems and methods (Howells, 1952).

The "avant-garde" see anthropology in the midst of a transformation in which "dynamic" research, whether social biology, the analysis of "whole cultures," dynamic linguistics, or what, will draw apart from the historical-classificatory tradition. They take what is valuable and true, such as time perspective, a cross-cultural emphasis, sophisticated "depictive integration,"[12] but strike out toward cooperation with other disciplines, including sociology, on the problem of the human condition. Most of the "structural-functionalists" and many cultural psychologists in modern anthropology belong in the "avant-garde," although theoretical and research trends are not always easily placed in terms of our dichotomy. For once more, professional identifications often result in mixed allegiances, and our distinction refers to diffuse movements in outlook, group identification, and attitude, and is not necessarily descriptive of the views of individuals.

In sociology, the number of standardized fields is larger than in anthropology: family, race, urban, rural, criminology, population, etc.; and there is probably less agreement on their number and classification. "Traditionalism" here means clinging to them, however classified and designated; "avant-gardism" means cultivating new fields with little concern that the picture of sociology is changing thereby. Much of what we said about the "avant-garde" anthropologist also applies to the sociologist, since one of the significant features of "avant-gardism" is focus on problem rather than discipline. In addition to subjects found to be of common interest to sociologists and anthropologists, the former have been particularly concerned with organization, bureaucracy, power, stratification, and communication (Bendix and Lipset, 1953). Since these and similar areas appear to be crucial for the understanding of mass society, the sociological "avant-gardists" turn out to be conservative: they have rediscovered the earlier mission of sociology, the study of the society of which it is a part. Perhaps, also, fewer of them than the "traditionalists" are plagued by scientism, and their respect for theory, especially the Weberian tradition, is great.

The major force affecting the changes sketched may well be the use of social scientists, including anthropologists and sociologists, by government and business during and since World War II. Many of them have been in and out of government service, and have benefited from government and private research contracts. The great majority of these have been practical: that is, anthropologists and sociologists have been used for the purpose of solving particular problems of human relations in different social settings. At one stroke, this objective has forced a certain unity of outlook on the participants: (1) they must become concerned with contemporary phenomena (this principally affects anthropology); and (2) they must take a multi-cultural point of view (this affects sociology). Studies of the human problems of industry, of relationships between Americans and the residents of foreign countries, research into psychological warfare, or into the problems of introducing modern technology to "underdeveloped areas," or of military government, and many others, have been attacked by "teams" of social scientists. The government and business organizations here adopt the role of an "encoding apparatus": professional sociologists and anthropologists might not talk to one another in the university, but they are brought into contact through the services of an intermediary, who simply puts them to work on questions he wants answered.

---

[12] Kroeber, 1952, esp. Part I; Redfield and others in Tax, Sol *et al.*, 1953, esp. pp. 151–156. The phrase is sometimes rendered as "descriptive integration."

In this area of business and government, acceptance of both sociology and anthropology as contributors to the solution of problems of our complex, world society, and in consequence of this acceptance, much communication and cross-fertilization is probably taking place. But this does not and need not lead to a fusion of the *professional* bodies of the two disciplines, or even to a growing similarity in their language. On the contrary, competition for contracts and recognition could even intensify professional distinctions.

INTELLECTUAL DIFFERENCES BETWEEN ANTHROPOLOGY AND SOCIOLOGY

Abandoning the historical approach, we now wish to contrast anthropology and sociology in general terms. The "anthropology" described here is the common-denominator "cultural anthropology" of the Americans; likewise the "sociology" is the standard or common "American" brand found in perhaps a majority of the teaching profession. We are conscious of difficulties in characterization and contrast; we view this section as exploratory and hope to revise it in later papers.

(1) Sociologists and anthropologists approach and perceive man differently; they have different *images of man*. In his search for laws and his interest in the abstract, the sociologist tends to view man as a technically "non-human" item, subject to many forces (including the sociologist's impersonal measurements).[13] In this view, man is an element of nature, immersed in his environment; and the sociological student stands apart, observing and measuring man-in-environment.

For the anthropologist, man is not a figure within a ground, but rather a figure against that ground: he is a *human* phenomenon, everlastingly variable, predictable only within broad limits if at all, and knowable only on a series of virtually infinite levels of understanding. For while the sociologist possesses or strives to possess measuring instruments which obtain precisely defined and selected data, the cultural anthropologist possesses a technically unlimited "understanding." While the sociologist proposes to stand away, to perceive man "objectively," not to involve his own feelings and reactions, the cultural anthropologist has often striven to know man *through* his own feelings and reactions, to view the human beings he studies as "fellow men," not as "subjects."[14]

(2) This suggests a difference in *philosophies of method*. The sociologist is expected to be able to use statistical techniques and a battery of specific concepts. His imagination and creativity are disciplined and held within bounds, and his individual qualities often are seen more in skillful combinations of old elements than in "original" inventions of new ones. The anthropologist, particularly the student of whole cultures, has more frequently encouraged the cultivation of individual intelligence, imagination, and other qualities believed to foster the "grasp" of the unique.[15] Anthropolo-

---

[13] Voegelin, Eric, 1948; Salomon, 1949; Bendix, 1951a, b; Strauss, 1953, Chap. 11; Wolff, 1946; *The American Journal of Sociology*, 1955, esp. Schwartz and Schwartz.

[14] Bateson, 1936, Chaps. I, VIII, XVI, 1941; Kluckhohn, F. R., 1940; Wolff, 1952b, Introduction.

[15] Mead and Métraux, 1953, esp. Chap. I; McCown, T. D. *et al.*, 1952; Wolff, 1948.

gists are sometimes pleased when others notice that they have assumed the gestures and attitudes of their "tribe": their own behavior has sensitively changed in accordance with the culture they have understood. Thus the anthropologist, in order to obtain an "objective" view of culture, strongly identifies and empathizes with the behavior of its carriers. This is quite at variance with the standard sociological approach, which instead stresses distance. The ramifications of this difference are considerable. Among other things, it points to a quite different meaning of "ethnocentrism" in the two disciplines. The anthropologist invites experimentation in contrasting interpretations of the same phenomenon (Lewis, 1951; Bennett, 1946), while the sociologist often strives after the opposite: the standardization of methods so that all observers will obtain the same results. Never again will the interpretation of the Iatmul culture be precisely as Bateson perceived and described it in 1936: never again will Bateson, as an individual, have the same experiences of interaction and understanding. It is such individual insights and portraits which are often valued by anthropologists.

This points to a crucial area of misunderstanding between the two fields. Many sociologists have great difficulty seeing this individualistic, creative approach as even remotely approximating "science," for, perhaps more than any other aspect of cultural anthropology, it offends or threatens their loyalty to objectivity and freedom from bias.[16] Their criticism, on the other hand, is often difficult for the cultural anthropologist to see, because his definition of "science" emphasizes "depictive integration" for which the observer's own abilities and views, in all awareness, are essential, rather than threatening, and to be excluded.

(3) The two fields differ with respect to their *structuring of problems*. The sociologist characteristically works with small-scale problems, often with a patchwork of them, all logically connected in such a manner as to permit the testing of a major hypothesis or theory. He generally constructs the dimensions of the problem in advance, often taking his cue from specific data-gathering techniques. The anthropologist, too, usually begins with generalized theoretical interests or hypotheses, but he typically casts them in much broader terms, attempting to obtain data on all relevant levels of analysis. He approaches the subject of research as a "glob," a totality to be comprehended both as a whole and as a system of parts. He often views the modest choices of the sociologist, who tries to limit his inquiry only to those phenomena for which he can acquire maximally controllable data, with considerable impatience. The anthropologist's approach can lead to large, comprehensive portrayals of total socio-cultural situations or to more carefully delimited analyses but, in either event, his choice is more often than not made *after* he has attempted to perceive and understand the totality. The choice is largely his; it is not directly determined by a pre-existing corpus of hypotheses, theories, or methodological techniques. Thus, Kluckhohn's investigation (1944) of the problem of Navaho hostility projection followed his attempt to understand a wider subject, Navaho witchcraft—itself a product of a prior, and even larger study: the nature of Navaho culture and society.[17]

The sociologists' difficulties with this approach show in the critical appraisal by some of them of the "ethos" school of whole-cultural studies, particularly of "national character" research.[18] While cultural anthropology generally is characterized by the "natural history" monograph, with its focus on a whole culture, the "ethos" variety has stressed specific elements of culture, and in its "national character" phase has applied "ethos" and related concepts to studies of large national societies. It is this latter attempt which has obviously appalled numbers of sociologists, and well it might, since their view of modern society has emphasized its heterogeneity, and has hardly prepared them to entertain the notion that a complex society might be argued to have a homogeneous culture. Their dissection of "ethos anthropology" sometimes verges on the sophomoric, and while it has pointed up basic problems connected with the analysis of whole cultures, it also has ignored many of its accomplishments (Bennett, 1954b). On this issue the cultural anthropologist generally would be inclined to agree with the sociologist Herbert Blumer, who points out (1954, pp. 9–10) that sociology has recently tended to substitute "specialized abstractions" for the "concrete and distinctive" instances of the "natural world." The whole-culture analyst, preoccupied with the concrete world of culture, may wonder at the vehemence of the critical attack and view it as a harping on "abstractions."

---

[16] E.g., Bernard, J., 1949, against Redfield, 1948. But note Thomas and Znaniecki, 1927, as well as Sumner, 1906, and Thomas, 1909, 1937, and their great influence in sociology.

[17] And this larger study was itself the culmination of several generations of research by many anthropologists on Navaho life and culture. Anthropologists have done comparable collective studies on other peoples: Malinowski's work on the Trobrianders; the fifty years of Americanist research on Hopi society; the British studies of Sudan peoples; and many others. Sociologists rarely read anthropological literature in an effort to comprehend one of these great collective studies of a people or a culture area; instead they sample individual studies.

[18] E.g., Tomars, 1943; Bierstedt, 1948; and various critiques and reviews of the "ethos" monographs in sociological journals, e.g., Bernard, J., 1945.

(4) In consequence of their divergent views of man and the study of man, anthropology and sociology differ with respect to the *selection of phenomena investigated.* Sociology has performed its best work, perhaps, upon structural systems and sociodemographic patterns, while cultural anthropology has made its signal contributions in the study of subtle and involved problems in such fields as magic and religion, sexual behavior, social configurations of emotion, or the valuational aspects of food-getting techniques. Like sociology, *social* anthropology has studied structure, but unlike sociology, it has done so in the field and with reference to a particular culture and to functional interpretations of linkages with symbolic patterns. Such phenomena are less easily subjected to the predictive generalizations sought by the sociologist and social psychologist. Whereas the latter might launch an investigation in order to demonstrate the "social framework of perception," the anthropologist, taking this social framework for granted, explores its consequences, and he is more concerned with "pattern" than "law." His materials, therefore, frequently represent instances of human behavior which he seizes and organizes, rather than statistical frequencies which prove or disprove a particular hypothesis.

The sociologist finds it difficult to see how the cultural anthropologist "proves" anything, while the anthropologist feels that "proof" is irrelevant in the sense that man is man wherever found: the grasp of a single instance of the "unique" itself is knowledge; no more than for the humanist does its relevance exclusively lie in its candidacy as a "case" in a required multiplicity of cases, as is demanded by the sociologist before he licenses it as knowledge.

The poverty of efforts by each field to articulate its basic postulates for the other, and thus to bridge differences in conception, is striking. Here, anthropology has probably been more remiss than sociology: anthropologists are notoriously disinclined to read the abundant documents on sociological method and theory.

(5) The two disciplines differ with respect to their *fundamental attitudes toward research.* The sociologist stresses non-emotionality, the exclusion of passion from the research enterprise. The anthropologist, on the contrary, expresses fervor and curiosity about his subject matter and proclaims the wonder of man and his works. Nor has his more recent interest in American and Western culture resulted in his assuming the sociologist's attitude of non-involvement; rather, he has discovered that the familiar, too, can be exotic. His imagination, curiosity, and enthusiasm have not dwindled, although neither, in the sociologist's opinion perhaps, has his disorderliness.

In addition to differences in the historical roots of anthropology and sociology, as were sketched previously, the different settings of the research activities in the two fields help to account for this divergence in attitude—above all, the importance of field work. Field work—a research habit of personal movement, of detaching oneself from routine surroundings—has led to a special self-image which permits the anthropologist to consider himself apart from "ordinary" social scientists (and, sometimes, entitled to behave differently).[19] Though the sociological "avant-garde," particularly in studies of the professions and organizational structure, uses participant observation and informal interviewing (e.g., Gouldner, 1954, appendix on "team" research), the majority, perhaps, of American sociologists find intensive field work alien to their tastes. The sociologist rarely leaves the familiar: even when he conducts community studies he does so less in the sense of exploration than in that of a temporary extension of his office or laboratory. He finds the anthropologist's sense of the exotic, and his occasional preoccupation with his own uniqueness, somehow offensive and "unscientific." He replaces fervor with concentration; flamboyant and individualistic inquiry, with anonymous pursuit of phenomena and problems in familiar settings. To the anthropologist, inversely, these sociological attitudes often appear dispiriting and commonplace; and he often forgets that they, too, can lead to the accumulation of knowledge.

(6) There exist differences between the American sociologist's and anthropologist's *conception of temporal sequence and history*. For the sociologist, as we said, history has most often meant Western history, which is documented. Hence his attention has been concentrated on specific sequences within a time span of the past few hundred years, and his view of temporal dynamics has been couched in terms of Western categories of time. For instance, Ogburn's "cultural lag"[20] is based on the Western notion of progress. In related fashion, the nineteenth-century "stage builders," such as Westermarck, Morgan, and Spencer, represent sociological projections of Western ideologies upon a universal plane mixed, however, with the anthropological attempt at discovering features by the comparative method which are applicable to all societies. By contrast, the more nearly "philosophical" stage builders, with equal historical significance for sociology—whether Condorcet, Turgot, Saint-Simon, Comte, Hegel, or Marx—clearly attempt to illuminate the writer's society through an interpretation of Western, rather than universal, history, even though they claimed to search for universal historical laws.

For the anthropologist, on the other hand, history and temporal sequence have meant either human history as a whole, or the history of any particular society studied —hence very often the history of societies lacking written history. The anthropologist thus is at home in non-Western time perspectives, which means that his time dimension, too, is deeper than the sociologist's—thousands of years instead of hundreds—and that his sense of historical reality is oriented toward larger and more diffuse phenomena: the development of technology, the growth of the division of labor, of religion, etc.

These differences in the conception of time in turn feed back into differences in the image of man. Despite occasional lapses into cultural determinism, on the whole, anthropological man is the carrier, vehicle, or creator of Civilization or Culture—history is human; man is historical. Sociological man, on the other hand, illustrates social (Western) laws of which he is not so much the creator as the creature.

Nevertheless, anthropology and sociology coincide in several areas of historical inquiry. One is the similarity between sociological historians of civilization, such as Sorokin, and anthropological depicters of universal culture, such as Kroeber. Another is the theoretical scheme of history of a more nearly "pan-human" kind. A third area of rapprochement lies in the studies of folk societies, pursued by Redfield (1953a; Foster, 1953) in anthropology and by Becker (1950, chapter 5) and the Southern folk sociologists, above all Odum, in sociology.[21] V. Gordon Childe (1946), in archeology, provides related insights and interpretations.

---

[19] Anthropologists have often seen field work as the essential factor of unity among people of great diversity of interests: "One cannot be too ethnological or too sociological or too anything else after the first six weeks of living with and trying to understand a tribe. Our behavior conforms to the common reality of a whole community of whole individuals; the differences in our professions of faith seem more important than they are just because we try by them to burst these bonds, for the most part in vain." (Tax, 1952, p. 390).

[20] Ogburn, 1950, Part IV; Mueller, 1938; Schneider, 1945.

Though concerned with colonialism, "Westernization," and kindred topics, the anthropologist, owing to his particular approach to history, has shown considerable detachment from the actuality of twentieth-century world society. He has indicated little interest in handling the complex data of documented historical periods, which require insights and methodologies different from those characteristic of ethnological or archeological reconstructions of history. On the other hand, the sociologist, with his predominantly a-historical orientation to the concrete present, has tackled the socio-political forces and attitudes which move men and determine policies. Anthropologists have much to learn from historical sociologists like Weber (1951, 1952), Barnes (1948), and Becker (1940) or sociologists of history like Tawney (1947), and sociologists can profit from the anthropological sense of historical perspective and proportion.

(7) Finally, we may note that anthropology and sociology differ with respect to *the larger aims of their sciences.* Anthropology has been concerned with issues more or less directly related to the question, "What is the nature of man?" To the more empirical sociologist, this (quite correctly) smacks of philosophy. The anthropologist shares with the philosopher and other "humanists"[22] the concern with such "non-objective" questions as the fate of civilization, man's moral integrity, the reality of culture, and other problems sometimes compartmentalized as "meta-anthropological"[23] —and there is the whole tradition of philosophical anthropology the discussion of which would far exceed the scope of this chapter. While the sociologist has shown interest in the anthropologists' data—for example, in materials on cultural relativity, like Hallowell's classic paper (1937) on civilized and nonliterate differences in temporal orientation—on the whole he tends to use such material mainly as illustrations of rather elementary points (see any introductory sociology text) and does not appear to be inclined to build the questions into his own approaches and theories (again with the important exception of some of the "avant-garde" sociologists with "structural-functional" theoretical interests). Yet even in anthropology itself, there are strong trends away from these preoccupations, beginning with Boas' insistence on facts, and continuing in many different forms in the modern "scientific" period. Whether one hopes to retain anthropology's peculiar heterogeneity, or prefers to find a narrower focus, it would seem dangerous to give up this interest in the burning questions concerning the nature of man.

RAPPROCHEMENT: THE STRUCTURAL-FUNCTIONAL APPROACH

As hinted earlier in our discussion of the "avant-garde," one of the most promising areas of rapprochement between the two fields is the growing interest of anthropologists in what sociologists call the "structural-functional" approach. Modern socio-cultural anthropology may perhaps be viewed as enclosed in a triangle, with one apex indicating historical studies; another, studies of whole cultures; and the third, structural-functional research and theory.

A plea for more comprehensive participation in the structural-functional approach by anthropologists has been made elsewhere (Bennett, 1954a; Beals, 1951). This approach is flexible within an "interdisciplinary" analysis which centers around such key concepts as "status," "role," "goal," "value." Structural-functional studies tend to be portrayals of structural systems in which behavior is explored in respect to its meaning or "function." These studies contribute to an ever more comprehensive and detailed map of characteristics of human phenomena and their interrelations. The publications of The Free Press—most of those in anthropology and many in sociology—provide a convenient single source of illustrations of this "map" and its "cartographers." (See, also, Wilson and Kolb, 1949.)

---

[21] *Social Forces*, 1952, esp. Odum.

[22] Redfield, 1950, 1953b; Benedict, 1948; Bennett, 1948; Kroeber, 1954; Erich, 1954; Wolff, 1952a. Here also belong Riesman's humanistic position (Riesman, 1954, esp. Chaps. 1 and 28) and Mills' critical position (esp. Mills, 1954). On the other hand it should also be noted that statistics has a well-established function in historical anthropology. See Driver, 1953.

[23] Bidney, 1949. For a more general statement on relations between anthropology and philosophy, see Edel, 1953.

Among prominent structural-functional theoreticians in sociology are Talcott Parsons, Robert K. Merton, and Kingsley Davis.[24] "Small group" research in social psychology and sociology for the most part utilizes a structural-functional approach, and often shows appreciation of and liaison with anthropological studies.[25] In anthropology, structural-functional studies were foreshadowed by Malinowskian functionalism (Malinowski, 1948) and by the long synchronic-structuralist tradition, with its "sociological" ancestor, Durkheim (Radcliffe-Brown, 1952), now represented most notably by the British social anthropologists (Evans-Pritchard, 1951). Linton's status and role concepts also have been most influential (Linton, 1936). Manifestations of contemporary and more explicit trends are Nadel's recent book, *Foundations of Social Anthropology* (1950); Kluckhohn's "structural dynamics," as exemplified in his study of Navaho witchcraft and in the follow-up analyses of similar phenomena by Honigmann and others; the Harvard, particularly E. Z. Vogt's, studies of values (Vogt and O'Dea, 1953); the newer acculturation research like that of Useem (1952) and a group of researchers working with Sol Tax (Bruner, 1953); and studies which seek to place kinship behavior in a larger context of institutional patterns (Ishino, 1953). "Applied anthropology" almost universally uses structural-functional schemes (Anonymous, 1952). It may be noted that we have grouped together a number of research trends which anthropologists conventionally divide between such categories as "functionalism," "structural studies," "culture-pattern research," "culture and personality," and "applied anthropology." This is a deliberate effort toward a theoretical categorization more commensurate with tendencies inherent in present approaches. Another example of such categorization is the overdue distinction between, on the one hand, "culture and personality" studies which emphasize ethos and whole-culture (and placed by implication at the corresponding apex of the triangle, where they contrast with sociology) and, on the other, structural-functional studies which include personality data (and classified in the "rapprochement" apex).

Perhaps this apex now signals the chief area of communication between sociology and anthropology. A sociologist can read one of the Harvard "values" monographs (Rapaport, 1952) and immediately comprehend its method and results, because of a common language and common analytical operations. Theoretical statements, like Nadel's volume, or from sociology, a book like Davis' *Human Society*, are viewed by adherents of the approach as broadly representative of their shared aims and conceptual schemes; the misunderstandings and polemic tendencies between sociology and anthropology are much reduced here.

For anthropology, the chief advantage of the structural-functional approach is that it permits it to borrow from (and to co-develop with) sociology a greater rigor and orderliness of concept and method. This is a desired and desirable remedy for the major defect of the method of "depictive integration": its frequent non-communicability, its often excessive individualism. In fact, the extent to which a cultural-anthropological monograph is comprehensible by many, as against few, is a rough measure of the extent to which some version of the "structural-functional" scheme has been adopted.

Among many specific approaches in anthropology which are undergoing a needed modification through structural-functional thinking is that which we may call "the fallacy of the microcosm." This concerns the use of single communities or tribes as representative units for larger entities: national cultures, culture areas, and the like. The concept of culture has grown up in the atmosphere of small communal units; its extension to larger social units which lack face-to-face patterns of social relations has been done by simply making existing face-to-face units stand for the larger, and *socially* different, whole. This operation betrays a lack of adequate comprehension of the dimensions of social relationships and group structure in the larger societies, which a structural-functional scheme does much to correct.[26] (See Jahoda *et al.*, 1951, for a comprehensive study of methods.)

---

[24] Parsons, 1951; Merton, 1949; Davis, 1949.

[25] Strodtbeck, F. L. *et al.*, 1954, esp. Olmsted.

This scheme does not necessarily—and must not be allowed to—obviate the continuation of the most characteristic product of anthropology: the monograph on a total socio-cultural phenomenon. There is no inherent conflict between the use of a conceptual scheme which differentiates among levels of meaning and an orientation toward the multi-level analysis of a single society, community, sub-culture, or institutional system. Moreover, the use of such a scheme requires greater precision in the formulation of problems, greater attention to the relationship between hypothesis and theory, and correspondingly, improved communicability to the reader. In turn, the sociologist may benefit from the more distinctly anthropological utilization of the structural-functional approach with its larger, cultural frame of reference in which "roles," "values," and other analytical elements are seen in the context of shared understandings and modes of behavior.

We may note in passing another potential area of rapprochement, the use of formal models of social behavior (Lazarsfeld, 1954; esp. Simon, 1954). This requires special treatment, which cannot be given it here. We refer to the development, in the past decade, of mathematical models which are used for purposes of both prediction and "understanding." Formal models unquestionably are part of the objective, "scientizing" trend mentioned somewhat critically in this chapter, but on the other hand, the participation of anthropologists like Bateson in discussions of formal models and their applications is perhaps indicative of their appeal to humanistically-inclined social scientists.

THE PROFESSIONAL RELATIONS OF ANTHROPOLOGISTS AND SOCIOLOGISTS: A PILOT STUDY

We noted previously that American sociology was accepted as an academic discipline considerably earlier than anthropology. With a few outstanding exceptions, like Harvard, anthropologists were introduced into American universities by non-anthropological departments, principally sociology. At the present time,[27] anthropology is taught in about 300 departments of American universities. About 50 of these are independent departments; the remainder, departments of sociology (and a sprinkling of others). Out of these 250-odd departments, about 25 are true "joint departments"; that is, anthropology and sociology both operate rather extensive programs, although the latter is almost always larger in number of staff and students. In the remaining, anthropology is a decidedly smaller factor than sociology; most of these "joint" departments are essentially departments of sociology which have hired an anthropologist, or list a course or two in the field. Although it is rather difficult to estimate, probably about 70 per cent of all academic anthropologists work in these 250-odd joint departments.

---

[26] An extremely pertinent discussion has been provided by Goldschmidt, who points out that anthropological studies of class phenomena in the United States have often ignored the question of representativeness of the communities they have used as units (Goldschmidt, 1950, esp. pp. 484–488). See also Bennett, 1954a. For the phrase, "fallacy of the microcosm," we are indebted to Bernard Rosenberg of Brandeis University.

[27] The analysis is based on the listings for American anthropology in Thomas, W. L. and Pikelis, A. (eds.), *International Directory of Anthropological Institutions*, 1953, and in Erminie Voegelin's 1950 account of anthropology in American universities. Theological schools and "institutes" were excluded from the count because their programs are so highly specialized. The definition of "joint department" is rather difficult, and more work needs to be done on the problem of anthropology's teaching program and academic representation.

Therefore, in a large number of American universities, particularly in the Midwest, anthropology is recognized academically as a kind of "junior partner" of the "senior" field, sociology. The sociologist can say justifiably that it was through his effort and interest that anthropology came to the campus, and hence the anthropologist owes him a debt of gratitude. The sociologist can say further that anthropology was brought to the department to provide something the sociologist needed; consequently, anthropology legitimately can be defined as a "service area," in part at the direction and disposal of the sociologist. This partially subordinate-superordinate status relationship has resulted in the formation of some very complex attitudes and patterns of relations.

In keeping with the exploratory character of the chapter, I (J.W.B.) decided to study mainly the relations of sociologists and anthropologists in the larger joint departments, where, presumably, the two fields sustain maximum contact and interaction. Of the total of 25 "true joint departments" described previously, we selected 16; of the departments where anthropology is decidedly a junior partner, we chose four cases. We made no attempt at a random selection, but rather picked departments and people who, in our best judgment, represented important trends in all directions, and who could be relied upon to provide full, accurate, and thoughtful answers.

A member of each department selected was sent a four-page questionnaire; all of these were returned, although two could be used only in a limited manner, because of insufficient information. (For reasons of space, the questionnaire will not be reproduced here, but a copy will be sent upon request. It is "open-ended," that is, in effect, a set of questions and topics intended to serve as a guide to thinking, rather than as an instrument designed for careful quantitative analysis.) Of the 20 recipients, 13 were professional anthropologists; 4, professional sociologists (two of whom were the authors of the deficient questionnaires); and 3, persons with mixed identity—"two-field men."

The questions asked concerned the history of the two fields in the department; the present division of personnel and subfields; the status of the instructional and research program; and the relationships between sociologists and anthropologists, including "images" of the respective fields, barriers to communication, and the like. Judgments concerning the desirability or undesirability of the situation, and recommendations of improvements, etc., were requested for each of the items.

The great majority of respondents answered fully and in detail, and six included a separate letter clarifying the answers and adding further information. I have considerable confidence in the accuracy of the general picture presented. And since the departments were selected from a group constituting the majority of anthropological installations in American universities, the results may apply beyond the special case of the joint department. I have, of course, used my own knowledge and observations derived from several years of working in one of the larger of these joint departments and from discussing problems with other midwestern anthropologists in similar situations.

Objective Positions of the Two Fields

In 18 of the 20 cases surveyed, the anthropologists were in a minority in the department, being outnumbered by sociologists on an average of almost two to one. In a plurality of cases, the respondents also reported that enrollment in anthropology courses was substantially lower than in sociology (averaging around one-half the sociology enrollment). At least five respondents volunteered the information that anthropology was weaker than sociology with respect to political power and prestige in the department and on the campus, although about half the questionnaires contained indications of change toward a more equal position.

The general picture of the relations between anthropologists and sociologists in the departments investigated was one of loose ties and few cross-professional affiliations in teaching and research. This tendency toward academic separation was evidenced by the listing of departmental courses under either "anthropology" or "sociology" in all but two of the departments. In general, academic distance and professional separation were greatest where anthropology was represented primarily by archeologists, ethnographers, and/or physical anthropologists; and sociology, by professional (criminology, family, etc.) or strong quantitative-empirical interests.

Collaboration in graduate seminars was more frequent than research, but in most cases the seminars were not given regularly and were the results of individual sociologists and anthropologists deciding to get together. Collaboration by members of the two fields on research projects was infrequent; in only six departments such collaboration was reported to have taken place in the last few years, and in most of these cases, the research was done on problems of an applied nature, where the researchers functioned as individual social scientists, and only rarely as specialized professionals. Finally, the majority of respondents indicated that they found greater collaboration in research and teaching desirable, but that they felt no strong needs to do anything about it.

Relations and Attitudes

If anthropology still is subordinate to sociology, but at the same time feels itself to be a distinct and co-ordinate professional field, the potentiality for social-emotional stress exists. In extreme cases, the self-esteem of the anthropologist is severely injured, and he develops an attitude of defensive resentment, as illustrated by the following situations described by anthropologists:

After answering "No" to a question concerning intellectual collaboration between the two fields, the respondent was asked to present his judgment as to whether the record was good or bad. He answered: "*Bad*—sociologists direct their papers to other sociologists and make no allowance for anthropologists present."

To a question asking how relations between the two fields could be improved, the same respondent answered: "Bring in more anthropologists so that the sociologists will become aware of the diverse branches of anthropology and recognize it as a fully independent discipline—not a *group of service courses*" (original italics).

To a question asking for "problems" in the relationships of sociologists and anthropologists, another respondent answered: "Primarily a feeling of anthropologists at times that they have a subordinate rather than a coordinate status . . . [should] maintain equal numbers and statuses of sociologists and anthropologists. Sociologists have tended to be more numerous and more powerful."

A typical issue out of which these defensive reactions may arise is described by a third respondent in his letter accompanying the questionnaire. In connection with his discussion of the one-year "introductory sociology" course which "attracts about 400 students each semester," he says: "The course is listed as a sociology course, but the first semester deals almost exclusively with anthropological materials and uses anthropology texts. . . . In effect, the sociology section gets credit for this large enrollment, and when we ask for another anthropologist we are told that our registration is too low. I presume this is a familiar situation to you!"

The sociologist respondents do appear to view anthropology as a "service" area, which can "add color and variety," to quote one, to the sociological offerings. But when the anthropologist asserts his professional rights—especially when he wishes to introduce courses not in line with the sociologist's conception of anthropology—the sociologist is likely to develop an attitude of injured paternalism, which, too, may accumulate noticeable bitterness:

"Anthropologists seem to be engaged in a kind of power drive to take over all the social sciences. They are difficult to satisfy. They want more enrollment, even though everywhere they are a small, specialized field."

In some cases where this conflict of attitudes becomes a prominent feature of the departmental atmosphere, the mutual understanding of the two fields seems markedly asymmetrical. Witness the following passage from an anthropologist:

"In my opinion many anthropologists have learned a lot from sociology and have begun to utilize many techniques used by them, i.e., attention to sampling, quantification, intensive study of a small problem, etc. I don't believe the sociologists at X University have as much an understanding of what anthropology is and does, primarily because they have to learn this second-hand from their readings rather than first-hand in field work as we do."

This situation seems to hold whether the anthropology represented in the department is socio-cultural or historical-physical. In the latter case, even though the sociologist *approves* of the specialization, he often shows little willingness to develop intimate familiarity with the goals of the archeologist, ethnologist, or physical anthropologist, instead preferring to keep him around, to quote one anthropological respondent, "as a kind of interesting pet." However, in general, social relations and academic communication do seem to improve somewhat when anthropology is represented by the socio-cultural variety.

Several respondents suggested that one of the causes for poor relations and poor communication was the failure of members of each side to read the literature of the other. Specific mention was made by one respondent of the tendency for sociological journals, in recent years, to publish "slanted" book reviews of "ethos" anthropology, the image of which, as held by sociologists in his department, conformed to these reviews. (Since anthropological journals rarely publish long reviews of sociological books, the anthropologist is hardly exposed to a complementary type of "poisoning." And note also that the excessively critical reviews aside, sociological journals do a remarkably faithful job of reviewing the better anthropology.)

Aside from these tendencies toward poor comprehension of the methods and objectives of the other field, protective and conflicting attitudes on the part of sociologists and anthropologists also reflect professional rivalries over such questions as which discipline is the more adequate or important. One respondent, in explaining why so little collaborative teaching and research existed in his department, commented:

"Interpersonal relationships are excellent but we have found difficulty in working professionally in the same harness. In research relationships there is strain over failure to see and to utilize the method and the point of view of the other. . . . There is no basic readiness to work together . . . it is complicated by an underlying feeling on both sides that apart from a few concepts, the method of one discipline or another is inadequate or unnecessary."

Another form of this view, indicating professional distinctness with an eye to wider professional horizons, is expressed by the following comment: "I feel personally that anthropology and sociology can perhaps just as often seek meaningful relationships with other disciplines—viz., economics, history, psychology, etc.—as they can with each other . . . simply putting them together administratively should not signify either assimilation or channeling of interests or problems in only those directions congenial to the two fields."

Another respondent viewed the problem as a conflict between, not *all* members of the two fields, but between "a fringe of individuals in both disciplines." He pointed out that "there are as many communication gaps or barriers between sociologists as between anthropologists and sociologists"—he might have added "and as between anthropologists." But these problems of communication differ from those based on the professional distinctions between the two fields. A professional anthropologist who thinks and works like a structural-functional sociologist apparently is just as likely to battle with the sociologists on professional issues in the joint department as is an archeologist. He may, under the pressures that drive him back into strong "anthropological" professional identifications, even shift his interests in theory and research in non-sociological directions.

Contrasting Imagery

These stresses also find expression in the images each field holds of the other. The sketches of such images offered by the respondents were remarkably similar in content, but heterogeneous in the degree of derogation and hostility, which depended upon the actual extent of frictions, professional hostilities, and defensive responses that varied from department to department.

The following selection of quotations

represents the respondent's opinion of the *anthropologist's images of the sociologist* in his department. Quotations 2 and 4 come from professional sociologists; the others, from anthropologists.

1. "Pedantic. Unimaginative. Reformer. Manipulator of concepts and research designs—but not active in empirical research."

2. ". . . some stereotyping of sociologists as technical gadgeteers obsessed with statistics, etc. On the other hand, appreciation for analytic skills and sophistication."

3. "The anthropologist thinks the sociologist has better data on Western culture, but thinks he does not always take the broad, pan-human view in his theorizing."

4. "In general . . . I would say that the anthropologist is inclined to find the sociologist to be rather narrow in his professional problem interests and to be less adventuresome in striking out. This is doubtless related to an anxiety [on the part of the anthropologist] about methods and techniques of collating and analyzing evidence."

5. "Sociologists spend a disproportionate amount of time with methodology and with seeking quantifiable data about isolated phenomena in isolated societies that they presume to treat as universal samples. They do, however, possess the makings of a rich theory that is already productive of many theorems suitable for empirical testing."

6. "The anthropologist is critical because the sociologist is too ready to generalize on the basis of data from only one culture."

7. ". . . the sociologist is viewed as a scientist whose main interests are in the field of social work."

8. "[The sociologist is viewed as] a functionalist without adequate training in anthropology and no appreciation of the value of time perspective."

A noticeable difference in attitude can be seen in these remarks, which correlates with the social situation in the department: considered as tense (1, 7, and 8), and as more relaxed (2–6).

Now for the same respondents' definitions of the *sociologist's image of the anthropologist:*

1. "Antiquarian. Nature lover. Non-scientific."

2. "Generally as another sociologist interested in preliterates. Also that he seems to have a foot in the sciences, the social studies, and the humanities."

3. ". . . the knowledge of the anthropologist is respected, the methodological sophistication is less admired. But not much 'pot hunter' stereotyping."

4. "The sociologist admires anthropology for its description, but thinks it is weak in theory."

5. "He [the sociologist] has no one view—more like two or three views based on his knowledge of department members and reading in the field. By and large, however, he has great respect for the anthropologist's empiricism geared to broad range in problem."

6. "The sociologist probably conceives of the model anthropologist as preoccupied with description of minutiae which he does not systematically relate to any developed theory. He has also expressed himself as saying that the anthropologist is quite unable to study well the complex organizations of the modern world."

7. "Favorable indeed." [Meaning, apparently, a naive impression of a collector of curious customs, with "color" value to the department.]

8. [An anthropologist is] a person who has to *camp out*, to do field work—often confuses the means with the end. No interest *or* background in history [modern history]."

The hostility of 1, 7, and 8 and the greater objectivity of the others are retained in these images. It is noteworthy that the anthropologist respondents tended to be more articulate concerning the sociologist's image of *them* than was the sociologist on the anthropologist's view of *him*. Clearly, the situation at this time is not symmetrical: the anthropologists seem uniformly more aware of the conflict situation.

Conditions of Good Social Relations and Communication

The foregoing sections present a seemingly pessimistic picture with a lack of integration and a tendency toward defensiveness and hostility. However, we have also noted that this is a matter of degree: that it is more apparent in some departments than in others. Which factors, according to the questionnaire data, appear to lead toward better social relations and more effective communication between sociology and anthropology in these joint departments?

(1) Social relations (apart from intellec-

tual relations) were good when professional differences between sociologists and anthropologists were minimized, and the representatives of the two fields behaved toward one another as social scientists rather than as representatives of professional bodies. Relations were particularly congenial, and mutual images more favorable, when important departmental decisions were made on the basis of issues common to the interests of both fields or of the department as a unit.

(2) Some respondents suggested that both social and intellectual relations between sociology and anthropology appear to improve when they officially separate into two departments. This implies that so long as the two fields remain together, relations are improved when professional distinctions are played down; but if professional distinctions are to be preserved, it is best to establish separate departments.

(3) Social relations—and, in this case, intellectual communication also—appear to improve, and mutual images to be less contrasting, when the department possesses one or more "two-field men" who are permitted to take a hand in important decisions affecting academic and research policy.

(4) Much depends on the chairman. Almost universally, chairmen of joint departments are sociologists. If the chairman is relatively uninformed, naive, or defensively hostile toward anthropology, relations and communication are worsened.

(5) Both social relations and communication appear to be more effective in departments where sociology and anthropology are not exclusively represented by extremes or opposites: historical-physical anthropology on the one hand, and "professional" or quantitative sociology on the other. In general, and ignoring personal frictions, sociologists and anthropologists who share interest in broader theoretical questions (the "avant-garde"?) common to all the social sciences appear to communicate more effectively. It is remarkable that in all cases where relations are good, theoretical allegiance is given to scholars like Merton, Weber, Parsons, Malinowski, and Kluckhohn.

(6) The mean age of departmental members seems to have some influence upon social relations and communication. In general, departments composed of younger men tend to communicate more freely and get along more congenially than do those with a preponderance of older persons, particularly when these hold the senior faculty statuses. Younger people (especially if "avant-garde"?) are probably less strongly professionally committed and identified, and thus are more willing to engage in social and intellectual relationships.

To summarize, while social relations and intellectual communication are not generally correlated, there does appear to be some connection between the two. When professional distinctions are played down, both sides given a stake in important departmental decisions, and where anthropologists and sociologists possess more similar theoretical and subject interests, there exists less hostility and derogation in mutual images, and consequently social relations are better. Although this is less apparent, more effective communication, manifested in research, teaching, and discussions, also seems to follow. But it remains true that no strong case can be made, on the basis of this particular set of data from the joint departments, for close intellectual and communicative bonds between anthropology-in-general and sociology-in-general. And professional rivalries and hostilities seem to lurk beneath the surface everywhere, aggravated by the prevailing structure of inequality between the two fields.

The poignancy of the entire situation may perhaps be conveyed by this quotation from a statement submitted by an anthropologist:

> "Those of us in these joint departments who have had to contend with a highly organized sociological profession have found ourselves in a series of frustrating and contradictory situations. For example, we may decide that the goal of the department should be integration: that is, eliminate professional distinctions in courses, and meet the sociologists half way—after all, they

seem to complain a good deal of the time about those high-hat anthropologists who will have nothing to do with them. But as soon as we recommend such integration, the sociologist loses interest, or worse, says that anthropology is trying to take over sociology. I know that we behave sometimes like eager beavers, and we do offend people in a more settled discipline, and certainly plan courses infringing their interests. But whatever the causes and blame, it seems clear that the problems which arise from a joint administrative framework are insuperable and make the game not worth the playing. We would be better off as separate departments."

Toward Communication: The Intellectual Atmosphere of Larger Joint Departments

Despite all strictures, there does appear to exist considerable ferment in the theoretical and methodological outlooks of both anthropologists and sociologists. This is apparent in some of the questionnaires and letters, as well as in the experiences of the writers of this chapter.

We now refer specifically to the larger and better balanced joint departments, which in general meet the criteria noted previously for "good" relations. Whether the growing similarity in the "avant-garde" views of sociologists and anthropologists in these departments is a result of deliberate selection of personnel, or whether it is a symptom of change through association, we do not know. But it is apparent that their converging perspectives move toward some approximation of the "structural-functional" viewpoint in certain types of cultural studies, institutional and organizational analysis, and social psychological research.

This suggests two "contradictory" trends. On the one hand, the professions are growing farther apart *as professions;* on the other, there may be an increasing *intellectual rapprochement.* Apparently, while anthropologists and sociologists wish to be separate and equal, they are also becoming somewhat more inclined toward, or rather prepared for, intellectual communication and collaboration. One respondent comments:

> "I, for one, have never known the solution of any problem to be aided by deciding whether the problem fell within the field of anthropology or sociology, or economics or politics, etc., for that matter. In short, I think we waste an inordinate amount of time talking about such field distinctions. If we must have a label for our work, I would prefer some mutual and unpretentious term such as social analysis. None of us [in this department] hesitate to cut across ordinary field lines."

Where this will lead is not clear at the present time. Certainly, the rapprochement sets up important stresses in both anthropology and sociology; perhaps more so in the former, because of the distance between the "avant-garde" viewpoint and that held by the representatives of "traditionalism" in archeology and physical anthropology. The "traditionalists" perhaps have good reason to feel that anthropology is "losing its soul," because they have little to say to devotees of structural-functionalism and their explorations into clinical psychology, Parsonian institutional analysis, and the like. But the traits common to all of anthropology and which give it its *raison d'être*—perennial curiosity, the sense of the exotic, the universal image of man, and the method of "depictive integration"—can survive regardless of subjects and problems in its sub-fields. This ought to be understood by the "traditionalists" lest they confuse particular concerns and methods with the spirit of anthropology; and by the same token, the "avant-garde" ought to remember that the historical and classificatory disciplines are important in signalling anthropology's humanistic orientation. For a humanistic orientation is not and should not be a divisive factor; on the contrary, it is the bridge between the "historical" and the "scientific" components of anthropology, as well as among all of the social sciences.

REFERENCES

Adorno, T. W. *et al.*
1950 *The Authoritarian Personality.* New York: Harper and Bros. 900 pp.

Anonymous
1952 "Interdisciplinary Research: A Comment" (Editorial), *Human Organization,* Vol. 10, pp. 3–4.

Barnes, H. E.
1948 *Historical Sociology.* New York: Philosophical Library. 186 pp.

Bateson, G.
1936 *NAVEN.* Cambridge: Cambridge University Press. 286 pp.
1941 "Experiments in Thinking about Observed Ethnographic Materials," *Philosophy of Science,* Vol. 8, pp. 53–68.

Beals, R. L.
1951 "Urbanism, Urbanization and Acculturation," *American Anthropologist,* Vol. 53, pp. 1–10.

Becker, H.
1940 "Historical Sociology," in Barnes, H. E.; Becker, H.; and Becker, F. B. (eds.), *Contemporary Social Theory.* New York: Appleton-Century. 947 pp.
1950 *Through Values to Social Interpretation.* Durham, N. C.: Duke University Press. 341 pp.
1954 "Anthropology and Sociology," pp. 102–159 in Gillin, J. (ed.), *For a Science of Social Man.* New York: Macmillan. 289 pp.

Bendix, R.
1951a *Social Science and the Distrust of Reason* (Publications in Sociology and Social Institutions, Vol. VI, No. 1). Berkeley and Los Angeles: University of California Press. 42 pp.
1951b "The Image of Man in the Social Sciences," *Commentary,* Vol. 11, pp. 187–192.

Bendix, R. and Lipset, S. M.
1953 *Class, Status and Power: A Reader in Social Stratification.* Glencoe, Ill.: The Free Press. 723 pp.

Benedict, R.
1948 "Anthropology and the Humanities," *American Anthropologist,* Vol. 50, pp. 585–593.

Bennett, J. W.
1946 "The Interpretation of Pueblo Culture: A Question of Values," *Southwestern Journal of Anthropology,* Vol. 2, pp. 361–374.
1948 "The Study of Cultures: A Survey of Method and Technique in Field Work," *American Sociological Review,* Vol. 13, pp. 672–687.
1954a "Interdisciplinary Research and the Concept of Culture," *American Anthropologist,* Vol. 56, pp. 169–179.
1954b "Review of Mead and Métraux, *The Study of Culture at a Distance,* 1953," *The American Journal of Sociology,* Vol. LX, pp. 91–94.

Bernard, J.
1945 "Observation and Generalization in Cultural Anthropology," *The American Journal of Sociology,* Vol. L, pp. 284–291.
1949 "The Art of Science: A Reply to Redfield," *The American Journal of Sociology,* Vol. LV, pp. 1–9.

Bernard, L. L.
1945 "The Teaching of Sociology in the U. S. in the Last Fifty Years," *The American Journal of Sociology,* Vol. L, pp. 534–548.

Bernard, L. L. and J.
1943 *Origins of American Sociology.* New York: Thomas Y. Crowell. 866 pp.

Bidney, D.
1949 "The Concept of Meta-anthropology and Its Significance for Contemporary Anthropological Science," pp. 323–355 in Northrop, F. S. C. (ed.), *Ideological Differences and World Order.* New Haven: Yale University Press. 486 pp.

Bierstedt, R.
1948 "The Limitations of Anthropological Methods in Sociology," *The American Journal of Sociology,* Vol. LIV, pp. 22–30.

Blumer, H.
1954 "What is Wrong with Social Theory?," *American Sociological Review,* Vol. 19, pp. 3–10.

BRUNER, E.
1953 "Assimilation among Fort Berthold Indians," *The American Indian*, Vol. VI, pp. 21–29.

CHILDE, V. G.
1946 (1st ed., 1942) *What Happened in History*. New York: New American Library. 282 pp.

CUBER, J. F.
1951 *Sociology: A Synopsis of Principles* 2nd ed. New York: Appleton-Century and Co. 647 pp.

DAVIS, K.
1949 *Human Society*. New York: Macmillan. 655 pp.

DIESERUD, J.
1908 *Scope and Content of the Science of Anthropology*. Chicago: Open Court Publishing Co. 200 pp.

DRIVER, H. E.
1953 "Statistics in Anthropology," *American Anthropologist*, Vol. 55, pp. 42–59.

EDEL, A.
1953 "Some Relations of Philosophy and Anthropology," *American Anthropologist*, Vol. 55, pp. 649–660.

EHRICH, R. W.
1954 "Anthropology in a Liberal Arts Curriculum," *Journal of Higher Education*, Vol. 35, pp. 357–362.

EMBREE, J. F.
1950 "A Note on Ethnocentrism in Anthropology," *American Anthropologist*, Vol. 52, pp. 430–432.

EVANS-PRITCHARD, E. E.
1951 *Social Anthropology*. Glencoe, Ill.: The Free Press. 134 pp.

FOSTER, G. M.
1953 "What Is Folk Culture?," *American Anthropologist*, Vol. 55, No. 2, pp. 159–173.

GOLDSCHMIDT, WALTER
1950 "Social Class in America—A Critical Review," *American Anthropologist*, Vol. 52, pp. 483–498.

GOULDNER, A. W.
1954 *Patterns of Industrial Bureaucracy*. Glencoe, Ill.: The Free Press. 282 pp.

HADDON, A. C.
1934 *History of Anthropology*. London: Watts. 146 pp.

HALLOWELL, A. I.
1937 "Temporal Orientation in Western Civilization and in a Preliterate Society," *American Anthropologist*, Vol. 39, pp. 647–670.

HONIGSHEIM, P.
1942 "The Philosophical Background of European Anthropology," *American Anthropologist*, Vol. 44, pp. 376–387.

HOUSE, F. N.
1936 *The Development of Sociology*. New York and London: McGraw-Hill. 456 pp.

HOWELLS, W. W.
1952 "The Study of Anthropology," *American Anthropologist*, Vol. 54, pp. 1–7.

ISHINO, I.
1953 "Oyabun-Kobun: A Japanese Ritual Kinship Institution," *American Anthropologist*, Vol. 55, pp. 695–707.

JAHODA, M.; DEUTSCH, M.; and COOKE, S. W.
1951 *Research Methods in Social Relations*. New York: Dryden Press. 2 vols. 759 pp.

KENNEDY, R. and KENNEDY, R. J. R.
1942 "Sociology in American Colleges," *American Sociological Review*, Vol. 7, pp. 661–675.

KLUCKHOHN, C.
1944 *Navaho Witchcraft* (Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. XXII, No. 2). Cambridge, Mass. 149 pp.

KLUCKHOHN, C. *et al.*
1947 "Statement on Human Rights (Submitted to the Commission on Human Rights, United Nations, by the Executive Board, American Anthropological Association)," *American Anthropologist*, Vol. 49, No. 4, pp. 539–543.

Kluckhohn, F. R.

1940 "The Participant-Observer Technique in Small Communities," *The American Journal of Sociology*, Vol. XLVI, pp. 331–343.

Kroeber, A. L.

1952 *The Nature of Culture*. Chicago: University of Chicago Press. 438 pp.

1954 "The Place of Anthropology in Universities," *American Anthropologist*, Vol. 56, pp. 764–767.

Lazarsfeld, P. F. (ed.)

1954 *Mathematical Thinking in the Social Sciences*. Glencoe, Ill.: The Free Press. 444 pp.

Lewis, O.

1951 *Life in a Mexican Village: Tepoztlán Restudied*. Urbana, Ill.: University of Illinois Press. 512 pp.

Linton, R.

1936 *The Study of Man*. New York: Appleton-Century. 503 pp.

Linton, R. (ed.)

1945 *The Science of Man in the World Crisis*. New York: Columbia University Press. 532 pp.

Lowie, R. H.

1937 *History of Ethnological Theory*. New York: Holt. 296 pp.

Malinowski, B.

1948 (1916) "Baloma; The Spirits of the Dead in the Trobriand Islands," in Redfield, R. (ed.), *Magic, Science and Religion*. Glencoe, Ill.: The Free Press. 327 pp.

Mannheim, K.

1952 (1925) "The Problem of a Sociology of Knowledge," in Kecskemeti, P. (ed.), *Essays on the Sociology of Knowledge*. New York: Oxford University Press. 327 pp.

McCown, T. D. *et al.*

1952 "Symposium: The Training of the Professional Anthropologist," *American Anthropologist*, Vol. 54, No. 3, pp. 313–346.

Mead, M.

1951 "Research in Contemporary Cultures," in Guetzkow, H. (ed.), *Groups, Leadership and Men*. New York: Carnegie Press. 293 pp.

Mead, M. and Métraux, R.

1953 *The Study of Culture at a Distance*. Chicago: University of Chicago Press. 480 pp.

Merton, R. K.

1949 *Social Theory and Social Structure*. Glencoe, Ill.: The Free Press. 423 pp.

Mills, C. W.

1954 "IBM plus Reality plus Humanism Equals Sociology," *Saturday Review of Literature*, Vol. 37, pp. 22–23.

Mitra, P.

1933 *History of American Anthropology*. Calcutta, India: Calcutta University Press. 239 pp.

Mueller, J. H.

1938 "Present Status of the Cultural Lag Hypothesis," *American Sociological Review*, Vol. 3, pp. 320–327.

Murdock, G. P.

1932 "The Science of Culture," *American Anthropologist*, Vol. 34, pp. 200–214.

1949 *Social Structure*. New York: Macmillan. 387 pp.

1954 "Sociology and Anthropology," pp. 14–31 in Gillin, J. (ed.), *For a Science of Social Man*. New York: Macmillan. 289 pp.

Murdock, G. P. and others

1950 *Outline of Cultural Materials*. 3d rev. ed. New Haven: Human Relations Area Files, Inc. 162 pp.

Nadel, S. F.

1950 *The Foundations of Social Anthropology*. Glencoe, Ill.: The Free Press. 426 pp.

Odum, H. W.

1952 "Folk Sociology as a Subject Field for the Historical Study of Total Human Society and the Empirical Study of Group Behavior," *Social Forces*, Vol. 31, No. 3, pp. 193–228.

Ogburn, W. F.

1950 (1922) *Social Change*. New York: Viking Press. 393 pp.

OLMSTED, M. S.
1954 "Orientation and Role in the Small Group," *American Sociological Review*, Vol. 19, pp. 741-751.
PARSONS, T.
1951 *The Social System.* Glencoe, Ill.: The Free Press. 575 pp.
PENNIMAN, T. K.
1952 (1937) *A Hundred Years of Anthropology* (rev. ed.). London: Duckworth. 512 pp.
POWDERMAKER, H.
1939 *After Freedom: A Cultural Study in the Deep South.* New York: Viking Press. 408 pp.
1950 *Hollywood: The Dream Factory.* Boston: Little, Brown. 342 pp.
RADCLIFFE-BROWN, A. R.
1952 *Structure and Function in Primitive Society, Essays and Addresses.* Glencoe, Ill.: The Free Press. 219 pp.
RAPAPORT, R. N.
1952 *Changing Navaho Religious Values* (Papers of the Peabody Museum of American Archaeology and Ethnology, Vol. XLI, No. 2). Cambridge, Mass. 152 pp.
REDFIELD, R.
1948 "The Art of Social Science," *The American Journal of Sociology*, Vol. LIV, pp. 181-190.
1950 "Social Science among the Humanities," *Measure*, Vol. 1, pp. 60-74.
1953a *The Primitive World and Its Transformations.* Ithaca, N. Y.: Cornell University Press. 185 pp.
1953b "Relations of Anthropology to the Social Sciences and the Humanities," pp. 728-738 in Kroeber, A. L. and others, *Anthropology Today.* Chicago: University of Chicago Press. 966 pp.
RICHARDS, A. I.
1939 "The Development of Field Work Methods in Social Anthropology," in Bartlett, F. C. *et al.* (eds.), *The Study of Society.* London: Macmillan. 498 pp.
RIESMAN, D.
1954 *Individualism Reconsidered.* Glencoe, Ill.: The Free Press. 529 pp.
SALOMON, A.
1949 "Prophets, Priests, and Social Scientists," *Commentary*, Vol. 7, pp. 594-600.
n.d. *History of Sociology, Abstracts.* (Mimeo., n.p.).
SAPIR, E.
1927 "Anthropology and Sociology," in Ogburn, W. F. and Goldenweiser, A. (eds.), *The Social Sciences and Their Interrelations.* Boston: Houghton Mifflin. 506 pp.
SCHATZMAN, L. *et al.*
1955 "Six Papers on Problems of Field Study," *The American Journal of Sociology*, Vol. LX, No. 4, pp. 329-379.
SCHNEIDER, J.
1945 "Cultural Lag: What Is It?," *American Sociological Review*, Vol. 10, pp. 786-791.
SCHWARTZ, M. S. and SCHWARTZ, C. G.
1955 "Problems in Participant Observation," *The American Journal of Sociology*, Vol. LX, No. 4, pp. 343-353.
SHILS, E.
1948 *The Present State of American Sociology.* Glencoe, Ill.: The Free Press. 64 pp.
SIMON, H. A.
1954 "Some Strategic Considerations in the Construction of Social Science Models," Chap. 8 in Lazarsfeld, P. F. (ed.), *Mathematical Thinking in the Social Sciences.* Glencoe, Ill.: The Free Press. 444 pp.
SMALL, A. W.
1924 *Origins of Sociology.* Chicago: University of Chicago Press. 359 pp.
SOCIAL FORCES
1952 Special issue on folk sociology, Vol. 31, No. 3.
STEWARD, J. H.
1950 *Area Research: Theory and Practice.* New York: Social Science Research Council, Bulletin 63. 164 pp.
STRAUSS, L.
1953 *Natural Right and History.* Chicago: University of Chicago Press. 327 pp.

STRODTBECK, F. L. *et al.*
1954 Special issue on small group research, *American Sociological Review*, Vol. 19, No. 6, pp. 651–781.
SUMNER, W. G.
1906 *Folkways*. Boston: Ginn and Co. 692 pp.
TAWNEY, R. H.
1947 (1926) *Religion and the Rise of Capitalism*. New York: New American Library. 339 pp.
TAX, S.
1952 "Review of E. E. Evans-Pritchard's *Social Anthropology*," *American Anthropologist*, Vol. 54, pp. 388–390.
TAX, S. *et al.* (eds.)
1953 *An Appraisal of Anthropology Today*. Chicago: University of Chicago Press. 395 pp.
THOMAS, W. I.
1909 *Source Book for Social Origins*. Boston: Badger. 932 pp.
1937 *Primitive Behavior*. New York: McGraw-Hill. 847 pp.
THOMAS, W. I. and ZNANIECKI, F.
1927 (1918–20) *The Polish Peasant in Europe and America*. New York: Knopf. 345 pp.
THOMAS, W. L., JR. and PIKELIS, A. M.
1953 *International Directory of Anthropological Institutions*. New York: Wenner-Gren Foundation for Anthropological Research, Incorporated. 468 pp.
TOMARS, A.
1943 "Some Problems in the Sociologist's Use of Anthropology," *American Sociological Review*, Vol. 8, pp. 625–634.
USEEM, J.
1952 "The Development of Democratic Leadership in the Micronesian Islands," in Spicer, E. H. (ed.), *Human Problems in Technological Change*. New York: Russell Sage Foundation. 301 pp.
VOEGELIN, ERIC
1948 "The Origins of Scientism," *Social Research*, Vol. 15, pp. 462–494.
VOEGELIN, ERMINIE
1950 "Anthropology in American Universities," *American Anthropologist*, Vol. 52, pp. 350–444.
VOGT, E. Z. and O'DEA, T. F.
1953 "A Comparative Study of the Role of Values in Two Southwestern Communities," *American Sociological Review*, Vol. 18, pp. 645–654.
WARNER, W. L.
1941 "Social Anthropology and the Modern Community," *The American Journal of Sociology*, Vol. XLVI, pp. 785–796.
WEBER, M.
1951 (1915–19) *The Religion of China* (Trans. by H. H. Gerth). Glencoe, Ill.: The Free Press. 308 pp.
1952 (1917–19) *Ancient Judaism* (Trans. by H. H. Gerth and D. Martindale). Glencoe, Ill.: The Free Press. 484 pp.
WEST, J. (pseud.)
1945 *Plainville, U. S. A.* New York: Columbia University Press. 238 pp.
WILSON, L. and KOLB, W. L.
1949 *Sociological Analysis*. New York: Harcourt, Brace. 866 pp.
WOLFF, K. H.
1944 "A Critique of Bateson's *NAVEN*." *Journal of the Royal Anthropological Institute of Great Britain and Ireland*, Vol. LXXIV, pp. 59–74.
1946 "Notes toward a Sociocultural Interpretation of American Sociology," *American Sociological Review*, Vol. 11, pp. 545–553.
1948 "The Unique and the General: Toward a Philosophy of Sociology," *Philosophy of Science*, Vol. 15, pp. 192–210.
1952a " 'Anthropology and the Humanities': Know Thyself." Columbus, Ohio (Hectographed). 17 pp.
1952b *Loma Culture Change: A Contribution to the Study of Man*. Columbus, Ohio (Mimeo.). 390 pp.

Index

Index

A

"Abbeville Jaw, The," 316
Abbie, A. A., 52, 57
Abel, 37
Aberle, David Friend, 267, 281
Aboriginal culture, 173, 174
Aborigines, 171; *see also* Australian Aborigines
Aborigines Protection Association, 321
Abrahamsen, 217
Abri Pataud, 85, 92
Acceptance, 169; *see also* Acculturation
Acculturation, 24, 126, 160, 188, 266, 272, 273, 276, 293, 307–8, 315, 318
  as emergence of a new dominant cultural type, 24
Acculturation in the Americas, 220
Acculturation and Personality among the Wisconsin Chippewa, 276
Achaean, 86, 127
Acheulean, 37, 84
Ackerknecht, Erwin H., 191, 198, 260, 279, 299, 309
Acosta Saignes, Miguel, 106, 107
"Acquired characters," 8
Acropolis of Baalbek, 82
"Action Anthropology," 313; *see also* Applied anthropology
Adams, John Boman, 282
Adapidae, 54
Adaptation and Behavior, 232, 234
Adaptive survival versus adjustment, 302; *see also* Biological evolution; Evolution
Adena culture, 119
Adorno, T. W., 332, 347
Aegean, 91
Aerial photography, 83
Aerial reconnaissance, 83
Aeta, 155
Afghanistan, 92
Africa, 30, 83, 84, 92, 153, 193, 197, 198, 214, 254, 255, 263, 270, 321; *see also* South Africa, West Africa, etc.
Afula (Israel), 88
Age groups, 254
Agora (Greece), 92
Agriculture, 10, 21, 37, 38, 39, 40, 120, 121, 174
  beginnings of, 120, 121
Aguilera, Francisco, 100, 107
Ahlmann, H. W., 43, 141
Aĩn Hanech site, 84
Aĩn Murifiq site, 92
Air pollution, 42
Aird, Ian, 230, 234
Akan, 159
Akan Traditions of Origin, 158
Alaska, 36, 101, 120, 123, 124, 127, 139, 141
Alaska-Siberia, 120
Albright, Frank P., 92, 93
Albright, W. F., 120, 128
Albritton, Claude C., Jr., 147
"Alcoholismo, Brujeria y Homocidio en dos Communidades Rurales de México," 273
Aleut, 118
Algeria, 80, 84, 92
Algiers (Algeria), 80
Algonquin, 101
Alleles, 14, 229
Allen's Rule, 230, 231
Allgemeine Völkerkunde, 156, 157
Allison, A. C., 234
Allison, Ira S., 141
Allison, Jean, 142
Alluvial terraces, 38
Alluvium, 35, 38
Almond, Gabriel A., 221, 222
Alphabet, 10, 17
Alpine, 228
Alpine (N.J.), 134
Alps, 139
Altai and Altaic, 89, 154
Altvölker, 155
Amaranths, 37
Amazon, 106, 107, 220
  Basin, 106
Amazon Town: A Study of Man in the Tropics, 203, 220
Ameib, 119
America, 13, 30, 84, 177, 206, 329
American Academy in Rome, 92
American Anthropological Association, 61, 91, 115, 219, 227, 295, 313
American Anthropologist, 102, 115, 116, 293, 295, 325
  "Southwest Issue" of, 102
American Antiquity, 100, 115, 116
American Association for the Advancement of Science, 31, 91
  Section H (Anthropology), 91
American Association of Physical Anthropologists, 91, 318
American community studies, 214–16
American Indian, 100, 215, 231; *see also* Applied anthropology
  origin of the, 100
American Indians in the Pacific, 153
American Journal of Physical Anthropology, 227
American Journal of Sociology, The, 334
American Life: Dream and Reality, 214
American Museum of Natural History, 99
American Numismatic Society, 91
American Oriental Society, 91
American Research Center in Egypt, 92
American School of Classical Studies, 86, 92
American School of Prehistoric Research, 79, 90, 91, 92
American Schools of Oriental Research, 86, 90, 91
American Southwest, 102, 329; *see also* Southwest (U.S.A.)
Americans and Chinese: Two Ways of Life, 219, 270
Ammar, Hamed, 219, 222
Amniota, 23
Amoeba, 16
Amphorae, 127
Ampurias (Spain), 87
"Analysis of Ritual Co-Parenthood (Compadrazgo), An," 270
Anatolia, 91
Anatolian Studies, 80
Anatomy, 8, 317–8
"Ancient Oikumenê as a Historic Culture Aggregate, The," 205
Ancient Society, 189
Andaman, 227
Andamanese, 69, 155
Andean Highlands, 198; *see also* Andes
Anderson, Arthur J. O., 105, 107
Anderson, Edgar, 43, 267, 281
Anderson, Ernest C., 142
Andes, 101, 106, 153, 198
Andover (Mass.), 119, 136
Andromache, 88
Andronovo, 89
Angiosperm, 32

Angles-sur-l'Anglin (France), 85
Anglo-Saxon, 296
Angus, J. H., 45
Animal domestication, 121, 154; *see also* Domestication
  origin of, 154
Ann Arbor (Mich.), 133, 134
Annales Archéologiques de Syrie, Les, 80
Annamese, 296
Annual Egyptological Bibliography, 79
Ansidonia (Italy), 92
Antevs, Ernst, 102, 109, 118, 123, 124, 128, 130, 137, 142
Anthropogeography, 48
Anthropoid, 52, 53
Anthropological Institute, Zürich, 50
Anthropological Quarterly, 325
Anthropological Review, 63, 316, 323, 326
Anthropological Society of London, 319
Anthropological Society of Paris, 317
Anthropological thought, 293
Anthropologist's images of the sociologist, 344
"Anthropologists' Laboratory, The," 188
Anthropology; *see* Cultural anthropology; Physical anthropology
Anthropology, 177, 293, 294
Anthropology and philosophy, relations between, 338
Anthropology Today, an Encyclopedic Inventory, 80, 128, 133, 193, 197, 247
Anthropozoikum, 79
Antilles, 106
Antiquarianism, 116
Antiquity of man, 65
"Antiquity of the Pineapple in America," 272
Antrim (Northern Ireland), 87
Antwerp (Belgium), 80
Anyang (China), 89
Aotes, 49, 54
Ape, 50, 53, 56, 73, 75
Apollonian, 273, 303
Applied anthropology, 207, 307, 308, 339
Appraisal of Anthropology Today, An, 80, 128
Apulian, 86
Arab, 203, 219
Arabia, 92
Arambourg, Camille, 84, 93
Arapaho, 304
Archaeologia Austriaca, 79
Archeological articles, topical analysis of, 116
Archaeological Institute of America, 89, 90, 91
Archaeological Survey in the Lower Mississippi Alluvial Valley, 133
Archaeologischer Anzeiger, 79
Archaeologisches Jahrbuch, 79
Archaeopteryx, 5
Archeological Theories and Interpretations, 28, 115–32
Archeologické Rozhledy, 79
Archeology, 29, 68, 79, 80, 82, 84, 99, 115, 126, 221, 248, 293, 313, 317, 324, 338
Archeology of Eastern United States, 101, 133
Architecture, 17
Archiv für Orientforschung, 79
Arctic, 30, 86, 101, 118, 123, 124, 151
  and Early Man, The, 123–126
  Ocean, 86
" 'Arctic Hysteria' and Latah in Mongolia," 267
Area studies, 332
Argentina, 107, 153
Argos (Greece), 88
"Arid North America," 102
Arizona, 123, 126, 135, 136, 140
  State Museum, 115
  University of, 115, 135, 136, 140
Armstrong, Robert Gelston, 284
Arnhem Land (Australia), 172, 173, 174
Arnold, James R., 134, 142
Arnold, Thomas, 2
Art, 11, 16, 17, 18, 101, 126, 221, 266, 272, 301, 306
  history, 221
Artifacts, 16, 17, 18, 84, 126, 174, 248, 307
Aryans, 161
Ashton, Eric Hayton, 50, 53, 57
Asia, 30, 81, 83, 84, 85, 100, 124, 126, 127, 172, 190, 197, 198, 218, 263, 321
Asiatische Herkunft der Südamerikanischen Metalltechnik, Die, 153
Assyrian, 10
Astronomy, 299
Aswan (Egypt), 219
Athapaskan Indians, 101
Athena, 86
Athens (Greece), 79, 82, 86, 92, 140
Atkinson, R. J. C., 87, 93
Atlanthropus mauritanicus, 68, 69, 84
Atmosphere, 39, 42
Attitude systems, 11
Aurignacian, 85, 150, 151
Australia, 6, 63, 140, 171, 172, 173, 174, 175, 177, 179, 206, 214
Australian Aborigines, 172, 175, 214, 251
Australopithecine, 50, 51, 52, 53, 65, 67–70, 71, 73, 75, 84
Austria, 79, 89, 157
Austrian Academy of Sciences, 169
Aveleyra Arroyo de Anda, Luis, 43, 103, 107, 124, 128
Aves, 23
Awatovi, 126
Ayres, E., 43
Aztec, 105

B

Baboons, 70
Bachhofen, 321
Back of History: The Story of Our Own Origins, 227, 298
Bacon, Elizabeth Emaline, 272, 284
Bacteria, 9, 20
Baiae, 88
Baikal (Lake), 89, 154
Baikal-Angara region, 86, 89
Bailey, F. G., 287
Baking Pot (British Honduras), 104
Balandier, G., 248–9, 255
Baldus, Herbert, 155, 164
Balfour, Henry, 267, 281
Bali (Indonesia), 161
Balkans, 89
Balkh (Afghanistan), 92
Baltic, 36
Bannister, Bryant, 141, 146
Bantu, 296
Barata, Frederico, 107
Barbeau, Marius, 284
Barker, H., 142
Barnes, H. E., 338, 347
Barnes, J. A., 255, 276, 291
Barnett, Homer Garder, 281, 309
Barnett, R. D., 127, 128
Barnouw, Victor, 222, 276, 291, 303
Barro Colorado, 55
"Barter and Exchange," 174
Bartholomew, George A., Jr., 76
Barton River (British Honduras), 104
Bascom, William R., 198, 270, 276, 283, 291
Base-leveling, 34, 35–6, 38
Basin of Mexico, 36
Bat Cave, 122
Bates, M., 119, 129
Bateson, Gregory, 9, 239, 255, 334, 335, 340, 347
Batungan caves, 92
Baumann, Hermann, 158, 164

- Beach, Frank A., 267, 281
- Beals, Ralph Leon, 193, 196, 199, 222, 248, 284, 326, 338, 347
- Bear Ceremonialism, 176
- Beardsley, Richard King, 103, 107, 218, 225
- Beattie, J. H. M., 284
- Becker, Howard, 279, 331, 332, 333, 338, 347
- Bedouin (Beduin), 152
- Beecher, Harry, 236
- Behavior, 8, 232
- Bekker, Konrad, 284
- Belgium, 323
- Beliefs and superstitions, 18
- Bellah, Robert N., 287
- Belous, Russell E., 142
- Belshaw, Cyril Shirley, 251, 255
- Belt cave, 154
- Beltrán, Gonzalo Aquirre, 285
- Ben-Ezra, A., 210, 222
- Benchetrit, M., 43
- Bendix, R., 333, 334, 347
- Benedict, Ruth F., 185, 188, 199, 204, 207–8, 217, 218, 221, 222, 299, 303, 304, 309, 338, 347
- Benington, R. Crewdson, 228, 229, 234
- Bennejeant, C., 54, 57
- Bennett, John William, 186, 208, 219, 222, 314, 326, 329, 335, 336, 338, 340, 347
- Bennett, Wendell Clark, 102, 105, 106, 107, 117, 129
- Benninghoff, W. S., 144
- Bensch, Peter, 152, 164
- Bentall, H. H., 234
- Berber, 159
- Bergmann's rule, 230, 231
- Bering Sea, 123
- Bering Strait, 125
- Berkeley (Calif.), 203, 293
- Berlin, Heinrich, 104, 107
- Bernard, J., 331, 335, 347
- Bernard, L. L., 331, 347
- Bernardi, Bernardo, 287
- Berndt, Ronald M., 274, 287
- Bernheim, E., 169, 179
- Bernshtam, A. N., 89, 93
- Berry, Helen Kirby, 231, 234
- Beyce Sultan site, 88
- Beyer, H. Otley, 81
- *Bhil in Zentralindien, Die*, 169
- Biancho, Ida, 234
- Bibikov, S. N., 89, 93
- Bidney, David, 9, 24, 162, 163, 164, 191, 199, 246, 247, 255, 279, 298, 309, 326, 338, 347
- Biegert, J., 50, 57
- Bierstedt, R., 335, 347
- Biological
  - anthropology, 293; *see also* Physical anthropology
  - basis of personality, 233
  - classification, 22
  - divergence, 10
  - evolution, 6, 12, 19, 20, 21, 22
  - hypotheses, 70–2
  - mechanism, 8
  - relations, 294–5
  - relativity, 19
- Biological and cultural study, rapprochement of, 293–5
- Biology, 3, 7, 8, 9, 10, 12, 13, 15, 20, 62, 294, 299
- Biometry and biometrics, 48
- Biosphere, 18
- Biotic communities, effect upon environment, 32
- Bird, Junius, 105, 106, 107
- Birdsell, Joseph Benjamin, 76, 231, 235
- Birket-Smith, Kaj, 120, 129, 157, 164, 174, 179
- Bishop Museum, 92
- Bison, 37
- Black Pottery, 90
- Blackfoot Indians, 278
- Blake, C. Carter, 69, 76
- Blanc, Alberto Carlo, 85, 93
- Blau, Monte, 134, 142
- Blegen, Carl W., 92, 93
- Bliven, B., 43
- Blood, 230
  - antigens, 231
- "Blowgun in the New World, The," 272
- Bluhm, Elaine, 102, 110
- Blumer, H., 336, 347
- Boas, Franz, 190, 191, 194, 199, 247, 259, 260, 261, 274, 299, 306, 326, 331, 338
- Body typing, 228; *see also* Constitution
- Boghaz Keui site, 88
- Bohannan, L. M., 281
- *Boletín Bibliográfico de Antropología Americana*, 100
- Bolivia, 106, 271
- Bolk, fetalization theory of, 53
- Bollaert, William, 316
- Boné, Édouard L., 55, 57
- Bonito pueblo, 36
- *Bonobo*, 51
- Boriskovskii, P. I., 85, 93
- Borneo, 63, 271
- Borob'ev, M. V., 85, 93
- Bosman, William, 322
- Bothmer, Bernard V., 88, 94
- Boulder (Colo.), 135
- Bouteiller, Marcelle, 283
- Boyd, William C., 230, 234
- Brachiation, 53
- Brady period, 139
- Brahman, 219
- Brahmins, 211
- Braidwood, Linda, 121, 129
- Braidwood, Robert J., 86, 92, 120, 121, 129, 152, 164
- Brain, 49, 50, 64–5, 69–70, 72–3, 75
  - uniqueness of, 65
- Brainerd W., 104, 108, 142
- Bram, Joseph, 279
- Brandeis University, 293, 340
- Brandywine R., 41
- Brazil, 155, 203, 204
- Brea, Bernabò, 86
- Breuil, H., 119
- Britain, 39, 314; *see also* British Isles, Great Britain
- British Academy, 237
- British Association for the Advancement of Science, 68
- British Empire, 198
- British Guiana, 106
- British Honduras, 104
- British Isles, 124; *see also* Britain; Great Britain
- British Museum, 135
- British Museum (Natural History), 135, 136
- British School of Archaeology (Rome), 88
- British social anthropology, 192
- Broad Typological Comparisons, 269–270
- Broca, Paul, 316, 317, 326
- Broecker, Wallace, 142
- Brokensha, D. W., 287
- Bronze Age, 86, 89, 141
- Bronzes, 140
- Broom, Leonard, 309
- Broom, Robert, 76
- Brown, Donald F., 83
- Brown, G. Malcolm, 230, 234
- Brown, H., 43
- Brown, Julia S., 281
- Brown, Paula S., 287
- Brues, Alice M., 234
- Bruner, Edward M., 339, 348
- Bryant, A., 88, 94
- Buchner, Giorgio, 87
- Bucy, 72
- Bulgaria, 89
- Bullbrook, J. A., 106, 108
- *Bulletin of the Department of Archaeology and Anthropology of National Taiwan University*, 80
- *Bulletin of the South African Archaeological Society*, 80

Bureau of Applied Social Research, 329
Burgh, Robert F., 102, 111
Buriats, 156
Burks, Barbara S., 232, 234
Burridge, Kenelm Oswald Lancelot, 287
Bushman, 119, 158, 198
  cave paintings, 119
Business, 38
Butt, A. J., 287
Butts, D. C. A., 57
Byers, Douglas S., 102, 108, 123, 124, 129
Byzantine, 88

C

Caesarea (Israel), 88
Cahnman, Werner J., 210, 212, 223
Cain, A. J., 230, 234
Calchi-Novati, Carla, 231, 234
Calendric cycle, 209
Caley, Earle R., 140, 142
California, 103, 125, 137, 271
  University of, 203, 293
Camara, Fernando, 287
Cambridge (England), 80, 81, 135, 136
  School of Anthropology, 247
  University of, 135, 136
Cambridge (Mass.), 91, 227, 232
Camel, 37
Cammann, Schuyler, 92
Campeche (Mexico), 104
Canada, 101–2, 103, 278
Canals Frau, Salvador, 107, 108
Cannae (Italy), 88
Cape Denbigh, 123
Cape York, 173, 174
Caracol site, 104
Carballo, P. J., 87, 94
Carbon, recovery of, 137
Carbon 14, 83, 101, 118, 296, 314, 319; *see also* Chronology; Radiocarbon dates; Radiocarbon dating; Radiocarbon dating methods; Radiocarbon laboratories
Carbon-14 Dating Laboratory, 118, 135; *see also* Radiocarbon laboratories
Carnegie Institution of Washington, 47, 103
Carpenter, C. R., 48, 55
Carrasco-Pizana, Pedro, 285
Carter, George F., 100, 108, 125, 127, 129, 138, 142, 146, 179
Cary stage, 139
Caskey, John L., 86, 92, 94
Caso, Alfonso, 103, 104, 105, 108
Caspian Sea, 154
Cassirer, E., 16, 24
Casson, Lionel S., 83, 94
Caste, 11, 161
Cattle, 154
Caudill, William Abel, 218, 223, 273, 286
Cayuá culture, 250
C.B.A., 82
Cells, 12
Central America, 103, 106, 153; *see also* Meso-America; Middle America
Central Plains (U.S.A.), 120
Cephalic index, 229
Ceppellini, Ruggero, 234
"Ceremonial Exchange in Western Arnhem Land," 274
Chac mool, 127
Chadwick, John, 86
Chalcolithic, 88, 89
Chance, M. R. A., 65, 67, 70, 71, 76
Ch'ang-sha (China), 90
Change and Culture, 33–4
Change and Ethics—A Summary, 42–3
Change and History, 219
Changes affecting environment, 34
Changes in Land Use, 37–8
"Changing Functions of the Huanancha Dance at the Corpus Christi Festival in Paracho, Michoacán," 276
"Changing Kinship Usages in the Setting of Political and Economic Change among the Nayars of Malabar," 160
Changing Man's Habitat: Physical and Biological Phenomena, 31–46
Changing Military Patterns on the Great Plains, 274
Chaplin, S., 45
Chapple, Eliot Dinsmore, 238, 255, 326
Charcoal, 39
Charente man, 69
Charles, Lucille H., 267, 281
Charnock, Richard Stephen, 316
Château-Gérard: The Life and Times of a Walloon Village, 219
Chelleo-Acheulean, 84
Chemical analysis of bone, 140
Chemical Methods of Dating, 139–40
Chemistry, 30
Chenchus, The, Jungle Folk of the Deccan, 149
Chêng Chên-tuo, 89
Ch'êng-kao-hsien (China), 89
Chenopods, 37
Cheops' pyramid, 88
Chia Lan-po, 85, 94
Chiapas (Mexico), 104
Chibcha Indians, 115
Chicago, The University of, 90, 128, 134, 136, 138, 313
Chichen Itza (Mexico), 103, 104
Child, Irving L., 267, 282
Child Training and Personality: A Cross Cultural Study, 267
Childe, V. Gordon, 24, 121, 129, 152, 164, 175, 176, 178, 180, 186, 297, 298, 338, 348
Childhood and Society, 267
Chimpanzee, 50, 51, 54, 72
China, 37, 80, 85, 90, 91, 120, 121, 152, 153, 161, 185, 203, 206, 219, 220, 297, 323
China's Gentry: Essays on Rural-Urban Relations, 219
Chinese
  civilization, 219
  culture, 219
  people, 161, 270, 305
Chinese of Sarawak, The: A Study of Social Structure, 219
"Chinese Society: Class as Subculture," 273
Chippewa Indians, 303
Chitin, 9
Choga-Zambil site, 88
Cholula site, 105
Chou-k'ou-tien (China), 89
Christchurch (New Zealand), 81
Christian theology, 12, 20
Christianity, 251
Chromosomes, 4, 8, 15, 229
Chronology, 115, 117, 133, 134, 141
  absolute, 133
  methods of obtaining, 133
  relative, 133, 134; *see also* Radiocarbon dates; Radiocarbon dating
Chronology and Dating Processes, 28, 133–47
Chrysanthemum and the Sword, The, 208
Cinema, 17
Circum-Caribbean area, 106
Cities, growth of, 37
Civilization, 21, 153, 185, 193, 203, 204–7, 209, 216, 218, 220, 222, 269, 302, 337
  criteria for delimitation of, 205
  a large view of, 204–71
  independent center in America, 153
  meaning of, 203
  quality of, 221
Clactonian, 172
Clark, H. C., 55, 57
Clark, J. Desmond, 84, 94, 142

Clark, J. Grahame D., 85, 120, 129
Clark, W. E. Le Gros, 50, 52, 53, 57, 66, 76, 78, 84, 98, 139, 147
Class
  structure, 216
  system, 214
  see also Caste
Clements, E. M. B., 54, 57
Clements, Forrest Edward, 31
Clements, Lydia, 138, 142
Clements, Thomas, 138, 142
Cleveland (Ohio), 31
  Harbor, 41
Climate, 42, 120, 121
  modification of, 42
Climatic change, 34, 36, 139
  fluctuations, 120
Climatology, 125
Clisby, Kathryn H., 146
Clovis complex, 123
Cluver, 72
Coahuila (Mexico), 103
Codices, 105
"*Cofradia* and *Compadrazgo* in Spain and Spanish America," 270
Coins, 133, 140
Cole, Fay-Cooper, 128
Cole, Sonia, 76, 142
Collias, N., 55, 57
Collier, Donald, 276
Collier, John, Jr., 292
Collins, Henry B., Jr., 101, 108, 123, 124, 129, 142, 146, 272
Collins, J. L., 284
Colman, E. A., 43
Colombia, 106, 115, 153
Colonialism, 338
Color caste, 214
Colorado, University of, 135, 136
Colson, Elizabeth T., 255, 276, 291
Columbia University, 99, 134, 136, 209, 213, 304
  Lamont Geological Observatory, 134
  Research in Contemporary Cultures, 209, 213
Comas, Juan, 100, 108, 283
Commission Internationale pour une Histoire du Développement Scientifique et Culturel de l'Humanité, 82
Communication, 10, 11, 17, 70, 71, 74, 214, 216, 315, 329
  between Sociology and Anthropology, 329
Community, 205, 215, 218
  versus society, 302
  study, 185, 188, 193, 220, 221, 262, 293, 302, 330, 337
"Community Studies in Japan and China: A Symposium," 218
Compadrazgo, 270
Comparative anatomy, 11, 18, 19, 71
Comparative method, 186, 221, 249, 259, 260, 261, 264, 275, 299, 314
"Comparative Method in Social Anthropology, The," 261
"Comparative Method, On the," 299
Comparative morphology, 9
Comparative physiology, 18, 19
Comparative Studies, Outline for the Classification and Analysis of (Table), 264
"Comparative Studies of Cultures and Civilizations," 219
"Comparative Studies of Values in Five Cultures," 300
Comparisons
  Broad Typological, 269
  between Continents or Nations, 270–1
  in Cultural Anthropology, 259–92
  Dimensions of, 263
  Distribution of Methods by Category of Comparison (Table), 265
  Distribution of Methods of the Three Larger Categories Compared with that of the Three Smaller Categories (Table), 265
  Global or Random, 266
  Location of Studies (Table), 265
  within One Continent, 271–2, 284
  within One Nation, 273–4, 285
  within a Single Culture Area or Region, 274–6, 287
  within a Single Local Group or Culture, 276–7, 291
  Statistical, 267
Complex civilizations and cultures, 185, 203–225
Components of physique, 228
Comte, Auguste, 321, 330, 337
"Concept of Incest in Sumatra, The," 274
Concepts of "Primitive" and "Native" in Anthropology, The, 187, 202
Condorcet, Marquis de, 337
Configurations of Culture Growth, 205, 293, 299
Connolly, C. J., 49, 58
Conquerors and Rulers, 152
Conservation Program, 31
Constitution, 48; *see also* Body typing; Physical anthropology
Contemporary civilizations, 216
Contreras, Eduardo, 108
Controls and experiments in field work, 194
Convergence, 9, 10
Conway, Verona M., 139, 142
Cook, Sherburne F., 140, 143, 144
Cooke, H. B. S., 84, 94
Cooley, 301
Coon, Carleton Stevens, 24, 92, 154, 186, 227, 231, 232, 235, 238, 255, 298, 309, 326, 327
Cooper, John M., 199, 303
Coorg, 219, 251, 252
Copenhagen (Denmark), 81, 134, 135, 136
  Carbon-14 Dating Laboratory, 135
  University of, 134, 135, 136
Copilco site, 35
Corbett, John Maxwell, 106, 113
Corinth (Greece), 92
"Corn Mother in America and Indonesia, The," 270
Cornell University, 267
  Project in Applied Anthropology, 267
Cornwall, Ian W., 138, 143
Corpus Vasorum Antiquorum, 80, 82
Cosa (Italy), 92
Costa Rica, 153
Côte d'Or (France), 87
Co-tradition, 117
Council for British Archaeology (C.B.A.), 81
Council for Old World Archaeology, 29, 79, 91
Cousteau, Jacques-Yves, 127, 129
Covariation, 238
Covarrubias, Miguel, 100, 101, 108
Craig, Harmon, 143
Crane, H. R., 134, 135, 143
Cranial capacity, 50
Craniology, 227
Crawford, M. D. C., 43
Creativity, 298
Cree Indians, 303
Crete, 79, 86
Crimea, 85, 89
Crocodiles, 23
Cro-Magnon, 65
Cross-Cultural
  Files, 267
  Method, 267
  Studies, 269
"Cross-Cultural Study of the Relationship between Child-training Practices and Achievement Motivation Appearing in Folk-Tales, A," 267
Cruxent, José M., 106
Cuba, 259, 270, 278
Cuber, J. F., 332, 348
Cubillos, Julio Cesar, 106, 109
Cull, Richard, 317, 327
Cultivated plants, 120; *see also* Agriculture

Cultural Anthropology, 169, 227, 233–4, 259, 260, 277, 333, 334–6
  comparisons in, 259
  convergence with physical anthropology, 233–4
Cultural Anthropology, 326
"Cultural Determination of Parental Attitudes," 267
Cultural Evolution, 10, 12, 18, 20, 22, 24, 117, 163
  as a part of the evolutionary process, 18
"Cultural Influences on Population: A Comparison of Two Tupi Tribes," 274
Cultural Patterns and Technical Change, 220
"Cultural Role of Cities, The," 269
"Cultural Study of Contemporary Societies, The: Puerto Rico," 220, 273
Culture, 9, 10, 11, 12, 15, 16, 17, 18, 151, 156, 157, 164, 169, 170, 175, 177, 178, 179, 192, 193, 203, 204, 205, 206, 207, 208, 212, 213, 214, 222, 227, 228, 232, 239, 246, 247, 250, 266, 268, 269, 271, 272, 273, 274, 276, 277, 278, 294, 295, 296, 299, 300–4, 318, 331, 335–7, 340
  adaptation, 101
  advance, 21, 24
  area, 266, 275, 278, 340
  change, 22, 266, 269, 276; *see also* Acculturation; Applied anthropology
  classification of, 117
  colonization, 117
  components of, 11, 17, 18
  contact, 7
  convergence, 10
  definition of, 10, 16
  determinism, 337
  development, 12, 149–168; *see also* Cultural Evolution
  diffusion, 332
  divergence, 24
  diversity, 29
  dominant types, 24
  economic organization of, 18
  elements, classification of, 17
  equation of prehistoric and primitive contemporary, 149, 150, 151, 164, 169
  functional approach, 11
  historical school, 177; *see also* Kulturkreis; Vienna School
  history, 28, 30, 99, 100–1, 149–68, 173, 293, 297–8, 302
  improvement, 24
  investigated by methods of scientific inquiry, 16
  limitation, 24
  link between a culture and a specific ethnic unit, 157
  material components, 17, 18
  parallels, 179
  pattern, 16, 195, 330–1, 339
  and Personality, 194, 234, 266, 302–5, 307, 313, 324, 339
  phenomena, 206
  potential, 33
  process, 16, 126, 162
  progress, 24
  reconstructions, 117
  relativism, 20, 21
  self-operating and self-reproducing system, 11
  tradition, 10
  traits, 7, 178
  uniformity, 117
  unique development in an animal, 295
  values, 300, 313
  variation, 157
"Culture Area and Culture Depth: With Data from the Northwest Coast," 274
"Cultures of the Central Highlands, New Guinea," 274
"Culturologists," 12
"Culturology," 178
Curry, L., 43
Curwen, E. Cecil, 157, 164
Cushing, Frank, 194
Cutler, Hugh C., 267, 281
Cyprus, 83, 88
Cyrenaica (Libya), 84
Cytoplasm, 8, 9
Czechoslovakia, 79, 85, 89

D

Dahsur pyramid, 88
Daifuku, Hiroshi, 100, 108, 117, 129
Danger Cave, 102
Danilevsky, 204
Danish Rask-Ørsted Foundation, 135
Dansereau, Pierre, 143
Darius, 128
Dart, Raymond A., 76
Darwin, Charles, 13, 29, 61, 63, 64, 65, 69, 72, 74, 75, 76, 233
Darwin, Charles, the Naturalist as a Cultural Force, 31
Darwin, Charles Galton, 43
Darwin, Frances, 64, 69, 76
Darwin-Wallace Controversy, 63–5
Dated coins, 133; *see also* Coins
Dating, 83, 124, 133; *see also* Radiocarbon dating
Dating the Past, 133
Daudai-Fly R., 173
Davalos Hurtado, Eusebio, 105, 107
Davidson, Daniel Sutherland, 171
Davis, William Allison, 233, 235
D'Azevedo, Warren, 198
Dead Sea scrolls, 88, 141
Death-control, 38
Death Valley (Calif.), 138
Deccan, 87
Decter, Moshe, 210, 223
Deebel, Wallace H., 140, 142
Deevey, Edward S., Jr., 139, 142, 143
"Deformations of the Human Cranium Supposed to be Produced by Mechanical Means, On the," 316
Dehn, Wolfgang, 87, 94
Dekeyser, P. L., 288
De La Fuente, Julio, 287
"Delineation of Civilizations, The," 204
Della Serra, 54, 59
Deltaic deposits, 35
De Mathurin, 85
"Demigods, Daemonia, Superstitions and Languages of Australia, On the," 316
Denbigh Flint Complex, 123
Dendrochronology, 30, 118, 140, 141, 149, 296; *see also* Tree-ring Analysis
Denise, 66
Denmark, 39, 134
Dentition, 49
Deo, S. B., 97
Department of Agriculture, U.S., 259
Department of Commerce, U.S., 42
Depictive integration, 333, 335, 339, 346
Deposition, 34
De Saussure, 16
Descent of Man, The, 63
Descriptive and Comparative Studies Chiefly on Adults, 49–51
Descriptive integration, 333
Desert varnish, 138
Deserts on the March, 31
Deuel, Thorne, 102, 108
Devereux, George, 303, 309
Dewey, John, 246
Diachronic studies, 158, 160, 164
Dibble, Charles E., 105, 107
Dickens, Charles, 67
Dickens, A. M., 230, 235
Dieserud, J., 330, 348
"Different Patterns of Blackfoot and Pueblo Adaptation to White Authority, The," 272
"Differential Acculturation of the Ahafo-Ashanti of the Gold Coast and the Indenie-Agni of the Ivory Coast," 274

Diffusion, 30, 101, 117, 126, 127, 178, 179, 332
Diffusion: Transmission and Acceptance, 169–81
  Fifty years of research on, in Australia, 171–5
  in a High Civilization, 175–6
  as treated by Herskovits, Kroeber, Lowie, Childe, and White, 176–8
Diffusionism, 259
Dinosaurs, 22, 23
Dionysian, 303
Di Peso, C. C., 126, 129
Dirección de Prehistoria, 103
Direction des Antiquités de Tunisie, 92
Directorate General of Antiquities of Iraq, 85
"Disorganization and Social Change in Rural Indonesia," 273
Dittmer, Kunz, 156, 157, 164, 248, 256
Divergence, 9, 14
Divine kingship, 206
Division of Anthropology and Psychology, National Research Council, 61
Djenne (French Sudan), 159
Dobzhansky, Theodosius, 15, 74, 76, 230, 231, 232, 235
Doctrine of Natural Law, 330
Doering, Heinrich Ubbelohde, 106, 108
Doilé, P., 43, 127, 129
Dolni Vestonice site, 85
Domestication, 156
  of animals, 120, 206
  of plants, 206
  see also Agriculture, beginnings of; Animal domestication
Dominion Physical Laboratory, 135
Dongson culture, 153
Donner, Joakim, 143
Dordogne (France), 85
Dorset culture, 101
  Eskimo, 124
Douglass, A. E., 43
Doura (Sicily), 85
Dow, Sterling, 86, 94
Dozier, Edward P., 185, 187
"Draft Map of the Culture Areas of Asia, A," 272
Drama, 17, 216
"Drama in Shaman Exorcism," 267
Dreimanis, A., 143
Drennan, M. R., 76, 140, 143
Dress, 11
  fashions, 207
Drews, R. A., 283
Driver, Harold Edson, 338, 348
Drobec, Erich, 172, 180
Dronkers, P. L., 161, 165
Drucker, Philip, 104, 105, 108, 288
"Dual Descent in the Nuba Hills," 274
Dube, S. C., 219, 223
Dubois, E., 66
Duff, Roger, 81
Durkheim, Emile, 171, 240, 242, 243, 249, 262, 321, 330, 331, 339
Dust storms, 40
Du Wors, Richard E., 273, 286
Dyson, Robert H., 154, 165

E

"Early Distribution of the Potato among the Coast Salish, The," 274
Early man, 30, 61, 100, 103, 124, 125; *see also* Fossil man; Paleoanthropology
Earthquakes, 34, 35
Eastern United States and Canada, 101–2
Eberhard, Wolfram, 152, 165
Eberhart, Hal, 103, 110
Eckelman, W. R., 145
Ecological Society of America, 31
Ecological system (ecosystem), 42, 221
Ecology, 8, 30, 269, 294
  and economy, 119–22
Economic Anthropology, 197, 267
Economic Life of Primitive Peoples, The, 197
Economy and economics, 30, 32, 266, 272, 273, 274, 276, 301, 321
Ecuador, 106
Edel, A., 338, 348
Eells, Kenneth, 235
Eggan, Frederick Russell, 128, 129, 146, 191, 193, 198, 199, 247, 256, 260, 261, 266, 274, 275, 279, 288
Egypt, 82, 88, 91, 152, 153, 185, 190
Egypt-Mesopotamia, 206
Egyptian, 10
  Exploration Society, 88
Ehrich, Robert W., 76, 79, 91, 94, 121, 129, 338, 348
Einstein, Albert, 13
Eiseley, Loren Corey, 28, 29, 61, 65, 73, 76, 97, 131
Eisenstadt, S. N., 254, 255, 256, 284
Eiszeitalter und Gegenwart, 79
Ekholm, Gordon Frederick, 28, 30, 99, 100, 108, 127, 129, 146, 179, 180
Elements of Social Organization, 237
Eleusis (Greece), 92
Elkin, A. P., 172, 274, 288
Ellis, C. B., 43
Ellis, Florence Hawley, 288
Elmendorf, William W., 284
Eloueran culture, 172
Eloxochitlan (Mexico), 273
Embree, John Fee, 332, 348
Embryology, 8, 229
Emeneau, Murray B., 143
Emery, W. B., 88, 94
Emory, Kenneth P., 92
Enculturation, 315
Encyclopaedia of World History, 79
Endocranial casts, 49
Energy, 33, 42
Engis, 66
England, 39, 81, 85, 135, 139, 141, 179, 217, 261, 323, 324, 331, 332; *see also* Great Britain
English, 296
  civilization, 175
Enkomi (Cyprus), 88
"Entstehung der primären Hochkulturen als ethnologisches Problem, Die," 152–3
Environment, 4, 32, 34, 36
  highly evolved and specialized, 32
  man's reaction upon, 36
Environmental
  change, 33
  changes produced by man, 36–42
  determination, 19
"Environmental Limitation on the Development of Culture," 152, 267
Eoanthropus, 68
Eolithic, 171
Epigraphy, 30, 127
Equidae, 23
Erasmus, Charles John, 270, 283, 286
Erikson, Erik H., 267, 268, 281
Erosion, 34, 36, 37, 38, 39, 40
Escalona, 267
Eskimo, 101, 118, 123, 157, 230, 232, 303
Essenes, 88
Estermann, C., 288
Esthetic World View, 306
Ethics, 11, 269, 301, 318
Ethiopia, 120
Ethnobiology, 163
Ethnocentrism, 295, 296, 332, 335
Ethnography, 126
"Ethnological Cultures and Their Archeological Background, The," 128
Ethnological Society of London, 317, 321, 322

Ethnological Society of Paris, 320
Ethnology, 30, 82, 157, 170, 178, 293–5, 313, 317, 318, 324, 333
Ethos, 205, 303, 335, 336, 339
Etkin, William, 65, 67, 70, 71, 76
Euripides, 88
Europe, 52, 84, 85, 91, 121, 122, 141, 152, 153, 177, 185, 198, 209, 219, 263, 271, 297, 308, 314; *see also* Western Europe
European painting, 12
Eustatic sea-level changes, 125
Evans, Arthur, 127
Evans, Clifford, Jr., 106, 107, 113
Evans, E. Estyn, 87, 94
Evans, John D., 88, 94
Evans-Pritchard, Edward Evan, 158, 162, 192, 199, 220, 247, 256, 260, 274, 279, 288, 299, 309, 339, 348
Evolution, 3, 4, 5, 7, 9, 10, 12, 14, 19, 20, 23, 47, 74, 178, 269
  adaptive, 4, 5
  advance, 5, 10, 15, 19, 22
  biological, 7, 9
  change, 31
  classification, 23
  convergence, 22
  cultural, 3, 7
  as a cultural process, 19, 23
  differentiation, 16, 22
  discovery of, 20
  divergence, 4, 5, 10, 15, 22, 23
  diversification, 19
  genetic basis of, 7
  improvement, 15, 22
  irreversible process, 3
  limit, 6, 12, 22
  mental improvement, 5
  psycho-social, 9, 10
  stabilization, 15
Evolution, The Modern Synthesis, 294
Evolution in Action, 294
Evolution as a Process, 294
"Evolution in Social Anthropology," 160
Evolutionism, 176, 178, 259
Excavation at Snaketown, Material Culture, 115
"Excavations at Guasave, Sinaloa, Mexico," 99
"Excavations at Tampico and Panuco in the Huasteca, Mexico," 99
"Experimental Design in the Study of Culture Change," 276
"Exploration in Definition and Classification, An," 300
Eye color, 230

F

Fabric of Chinese Society, 219
Fallers, Lloyd Ashton, 288
Famagusta (Italy), 83
Family, 216, 217; *see also* Kinship
Family and Colour in Jamaica, 220
Far East, 153
Far-Eastern Archaeological Society, 90
Far-Eastern Prehistory Association, 81
Far-Eastern Prehistory Congress, 81, 85
Far Eastern Quarterly, The, 218
Farewell to European History, 297
Fasti Archeologici, 79, 82
Feder, A. L., 169, 180
Feely, H. W., 118, 130
Fei Hsiao-t'ung, 219, 223
Feng-pi-t'ou (Formosa), 90
Fêng R., 89
Fenton, William Nelson, 276, 291
Ferdon, Edwin N., Jr., 109
Ferguson, Vera M., 267, 281
Fergusson, G. J., 135, 143
Fertile Crescent, 120
Fertilizers, 39
Feuchtwanger, Franz, 109
Fiction, 216
Field, Henry, 91
"Field Guide for a Study of Socialization in Five Societies," 269
Field relationships, 194
Field Techniques and Methods, 194–5
Film analysis, 214
Fine arts, 301
Finland, 141
Fire, 37, 73, 75, 169
Firth, Raymond William, 186, 192, 199, 237, 238, 242, 256, 276, 279, 283, 291
Fischer, H. Th., 274, 288
Flannery, Regina, 272, 284
Flint, Richard F., 143
Flood, 41
Flor, Fritz, 154
Florida, 138, 139
Flotation of charcoal, 137
Fluorine, 83, 139, 140
"Focus of Cuban Santeria, The," 270
Folk
  medicine, 272
  societies, 152, 338
Folk Culture of Yucatan, 273
Folklore, 313
Folsom, 102, 123, 124
Fontechevade, 75
Fontes Praehistorici, 79
Food gathering, 121, 122, 154
  producing and production, 121, 122, 152
Ford, Clellan S., 267, 268, 281
Ford, E. B., 309
Ford Foundation, 259
Forde, Daryll, 164, 246, 285, 314, 327
Forests and forestry, 38, 39
"Form, Variation and Meaning of a Ceremony," 276
Formosa (Taiwan), 80, 90
Formozov, A. A., 85, 89, 94
Fort Ancient Aspect, The, 133
Fortes, Meyer, 163, 165, 247, 256
Fossil, 47, 67
  apes, 52
  fuels, 32
  man, 28, 61–78; *see also* Early man; Paleoanthropology
Foster, George McClelland, 165, 197, 199, 223, 270, 272, 283, 284, 338, 348
Foundations of Social Anthropology, 339
Fox, C. S., 43
France, 13, 39, 85, 86, 323, 324, 332
Francis, E. K., 286
Frazer, James G., 261, 330
Frechkop, S., 51, 58
Free Press, The, 339
Freedman, Lawrence Z., 267, 281
Freeman, Frank N., 232, 235
French
  culture, 232
  revolution, 330
Freund, William, 316
Frey, David G., 139, 143
Fried, Jacob, 291
Fried, Morton H., 43, 218, 219, 223, 225, 267, 273, 281, 286
Friedman, G. A., 267, 282
Frobenius-Institut, 156
Fuegians, 120
Fuel, 37, 39
Fürer-Haimendorf, Christoph von, 28, 30, 149, 161, 165
Fuller, John L., 233, 235
Funan, 83
Function, 186, 237–59, 339
  general sense of the term, 237–9
  general sociological contributions, 241–5
  general treatment of concepts in recent anthropology, 245–51
  integration, 246
  recent anthropological history of the concept, 239–41
  structure as the correlate of, 239
  unity, 239, 242, 243
  usages of concept, 244
  use of the concept vs. use of the term, 237–8
Functionalism, 176, 237, 246, 259, 332, 339

"Functions of Wealth, The," 250
Funktion, 248

G

Gamberian, 172
Garcia Granados, Rafael, 105, 109
Garn, Stanley M., 231, 235
Garrod, Dorothy A. E., 85, 94
Gavan, James Anderson, 54, 58, 60
Gayton, Anna Hadwick, 290
Gê Indians, 155
Geddes, Patrick, 38
General Theory and Method, 298–300
General Treatment of Functional Concepts in Recent Anthropology, 245–51
Genes and gene-complex, 4, 8, 9, 13, 14, 15, 229
Genetics, 4, 8, 9, 13, 14, 48, 229, 234, 294, 303, 318
Genghiz Khan, 13
Genius, 12, 299
Genotypic system, 8
Geochronology, 133
Geography, 317
Geological climate, 36
Geology, 30, 249, 317
Geomorphology, 125
Georgia, 117, 138
Gerasimov, M. M., 94
Germ-plasm, 8, 9, 10
German, 216, 217, 218
Germania, 79
Germany, 79, 87, 141, 157, 185, 216, 218, 297, 324, 329, 332
Geschichte Afrikas, 158
Gesell, Arnold, 54
Gestalt, 15, 195
Ghirshman, R., 88
Ghost belief, 254
Gibbon, 72
Gibson, Gordon Davis, 288
Giddings, James Louis, Jr., 101, 109, 123, 130, 144
Gifford, Edward W., 92
Gill, Edmund D., 140, 143
Gillin, John Phillip, 223, 246, 288, 327, 332
Gimbutas, Marija, 86, 94
Ginsburg, 268
Giotto, 13
Girling, F. K., 286
Gjessing, Gutorm, 124, 130, 157, 165
Glacial
  age, 36
  history, 125, 139
Glaciology, 125
Glendinning, R. M., 44
Global or Random Comparisons, 266–70, 281
Gloger's Rule, 231
Glottochronology, 30, 83, 141, 186, 296, 314
Gluckman, Max, 284
Glueck, Nelson, 92
Gnathostomata, 23
Goats, 37, 154
Godfrey, C. L., 144
Godsdienst der Praehistorie, De, 150
Godwin, H., 135, 142, 144
Göteborg (Sweden), 135, 136
  University of, 135, 136
Goggin, John Mann, 102, 109
Gold Coast, 159
Goldenweiser, Alexander, 327
Goldfrank, Esther S., 272, 284
Goldman, Irving, 275, 288
Goldschmidt, Walter Rochs, 271, 276, 279, 283, 291, 340, 348
Goldthwait, Richard P., 144
Goncim, Zakaria, 88
Good, R., 44
"Good deeds," 209
Goode, W. J., 267, 281
Goodwin, A. J. H., 84, 95
Goodwin, Grenville, 193, 199
Gordion site, 92
Gordon, E. B., 60
Gorer, Geoffrey, 213
Gorilla, 50, 51, 62, 72
Gorillidae, 51
Goris, Roelof, 161, 165
Gottman, J., 44
Gough, E. Kathleen, 160, 165, 223, 253, 256
Gould, Laurence M., 138, 146
Gouldner, A. W., 337, 348
Graebner, F., 30, 155, 170, 171, 172, 173, 175, 176, 179, 180, 190, 199
Granet, Marcel, 165
Grassland, 37, 39–40, 69, 73
Gray, D. E., 46
Great Britain, 38, 87, 308, 325, 326; *see also* Britain; British Isles
Great Lakes, 119, 137, 139
Great Plains (U.S.A.), 35, 303
Greece, 86, 88, 92
Greek, 12, 20, 86, 87, 88, 127
  Archaeological Society, 88
  philosophy, 20
  sculpture, 12
Greenberg, Joseph H., 186, 296, 297, 309
Greenland, 101, 139
Griffin, James Bennett, 28, 30, 101, 109, 127, 128, 130, 133
Groningen (The Netherlands), 135, 136
  University of, 135, 136
Groslier, Bernard P., 81, 83
Gross, M. S., 142
Groth-Kimball, Irmgard, 109
Grout, Lewis, 316
Growing Up in an Egyptian Village, 219
"Growing Up and Its Price in Three Puerto Rican Subcultures," 273
Growth studies, 48, 53–5, 313; *see also* Constitution
Grunebaum, G. E. von, 219, 223
Guam I., 92
Guatemala, 104, 118, 250
Guiart, Jean, 288
Guiteras Holmes, Calixta, 288
Gulf Coast (U.S.A.), 105
Gulick, John, 223
Gully formation, 38, 40
Gulo, 5
Gumma Prefecture (Japan), 86
Gupta, N. C., 165
Gutkind, E. A., 44
Gvosdetsky, Vasyl, 144
Gymnosperms, 32

H

Habitat, 10, 33
Haddon, A. C., 247, 330, 348
Hadlow, L., 44
Haekel, Josef, 155, 165, 173, 180
Hagen, A., 122, 130
Hague, The (The Netherlands), 82
Hahn, Eduard, 154
Hair, 229, 230
Halafian, 121
Hall, A. R., 164, 167
Hallowell, Alfred Irving, 176, 276, 279, 291, 303, 338, 348
Hamilton, J. R. C., 87, 95
Hančar, Franz, 154, 165
Handbook of Latin American Studies, 100
Handbook of South American Indians, 105
Hannibal, 88
Harappa site, 87, 153
Harcourt, Raoul d', 101, 109
Hardy, A. C., 309
Harris, H., 231, 234, 235
Harrison, H. S., 164
Hart, C. W. M., 276, 277, 291
Harvard University, 79, 85, 90, 122, 227, 300, 308, 340
  Department of Social Relations, 300
Harwell (England), 135

Hastinăpura site, 87
Hatra (Iraq), 82, 88
Hatt, Gudmund, 157, 164, 270, 283
Hatt, P. K., 44
Haua Fteah (Libya), 84
Haury, Emil W., 28, 30, 102, 106, 109, 115, 123, 124, 130, 146
Havana, University of, 259
Havighurst, Robert J., 235
Hawaii, 92
  University of, 92
Hawkes, C. F. C., 116, 130
Hawley, Florence, 288
Heathens, The: Primitive Man and His Religions, 227
Heberer, G., 52, 58
Heck, H., 51, 60
Hediger, H., 56, 58
Hegel, G. W. F., 337
Heidelberg, 69, 135, 136
  Man, 84
  University of, 135, 136
Heine-Geldern, Robert, 100, 109, 153, 165, 179, 180
Heizer, Robert Fleming, 103, 109, 133, 134, 140, 143, 144, 281
Helladic, 86, 88
Henderson, Gerald M., 76
Henriques, Fernando M., 220, 223
Henry, Jules, 194, 199, 279, 291
Hera, 86
Herbs, 37
Heritage of Conquest, 220
Herrick, Virgil E., 235
Herskovits, Melville J., 175, 176, 177, 180, 195, 197, 198, 199, 247, 256, 260, 267, 277, 279, 281, 326, 327
Herzog, Elizabeth, 209, 211, 225
"Heterogeneity of Marginal Cultures, The," 272
Heuneberg (Germany), 87
Heusser, Calvin J., 139, 144
Heyerdahl, Thor, 100, 109, 126, 130, 153, 165
Higuchi, T., 96
Hilger, Sister M. Inez, 280
Hill, W. C. Osman, 49, 50, 51, 58, 76
Hillaby, John D., 76
Hindu, 161, 211
  culture, 172
Hindu Kush, 92
Hinduism, 160, 161
Hippocamus minor, 62
Hirsch, David I., 118, 130, 141, 144
Hirtenkulturkreis, 154
Historia Mundi, 156
Historical Backgrounds of Relations of Sociology and Anthropology, 330–4
"Historical Changes in the Osage Kinship System," 276
Historical Character of Ethnology, 169–70
History of Biological Theories, 11
History of Ethnological Theory, 177
History and historicity, 29, 30, 48, 162, 169, 170, 207
  of anthropological thought, 293–311
  Bidney's definition of, 162
  linking of ethnology and prehistory to, 170
"History and Process in Civilization," 205
History of Technology, A, 164
Hittite, 10, 88
Hoabinhian culture, 85, 172
Hobhouse, 268
Hockett, Charles Francis, 141, 144
Hodgen, Margaret T., 175, 179, 180, 219, 223
Hoebel, Edward Adamson, 267, 281, 292
Hofer, H., 49, 58
Hogben, Lancelot, 233, 235
Hogbin, Herbert Ian Priestley, 274, 276, 288, 291
Hoijer, Harry, 193, 196, 199, 326
Holas, B., 288
Holland, 38, 79, 135; *see also* Netherlands
Hollywood (Calif.), 195, 196
Holmberg, Allan R., 271
Holmyard, E. J., 164, 167
Holzinger, Karl J., 233, 235
Homans, George C., 238, 243, 250, 256
Homo, 125, 126
  rhodesiensis, 68
  sapiens, 10, 75, 125, 157, 232
  sylvestris, 56
Homotherma, 23
Honan (China), 89
Honigmann, John J., 274, 288, 302, 303, 305, 308, 309, 339
Honigsheim, P., 330, 348
Hooijer, Dirk Albert, 76
Hoop, Th. van der, 161
Hooton, Earnest Albert, 228
Hopefield (So. Africa), 84
Hopewell culture, 119
Hopi, 126, 185, 335
Hopkins, D. M., 144
Horberg, Leland, 44, 144
Horse, 37, 154
Horton, Donald, 268
Hottentot, 72
Hough, Jack L., 137, 138, 144
House, F. N., 331, 348
Howe, Bruce, 86, 92, 95
Howell, Francis Clark, 44, 77, 95
Howell, P. P., 288
Howells, William White, 84, 185, 227, 298, 309, 333, 348
Howling monkeys, 55
Hsia Nai, 89
Hsu, Francis Lang-kwang, 219, 223, 270, 283
Hürzeler, Johannes, 52, 58
Huggins, Kathryn, 204
Hui-hsien (China), 89
Human
  ecology, 313
  evolution, 48, 61, 66, 67, 69, 233
  fossils, 69
  genetics, 185, 229
  nature, 18, 227, 294, 295–6
  needs and desires, 17
  paleontology, 315
  phylogeny, 67
  progress, 20, 24
  rights, 330
  values, 20
  variation, 185
  see also Man
Human Animal, The, 186, 227, 294
Human Problems and Technological Change, 220, 267
Human Relations Area Files, Inc., 267
Human Society, 339
Humanities, 186, 204
"Humanities in Cultural Anthropology, The," 299
Humble Oil Company, 135, 136
Hume, David, 321
Hunan (China), 90
Hungary, 89
Hunt, Charles B., 138, 144
Hunt, James, 319, 322, 327
Hurme, V. O., 54, 58
Hurok-Hupa, 271
Hurt, Wesley Robert, Jr., 101, 109
Huxley, Julian S., 2, 24, 186, 294, 295, 296, 309
Huxley, Leonard, 2
Huxley, Thomas Henry, 2, 62, 64, 74, 77, 294, 322
Huxley Memorial Lecture and Medal, 2, 293
Hybridization, 229
Hyderabad (India), 149
Hydrologic cycle, 40
Hydroponics, 31
Hyksos burials, 88
Hymans, E., 44

I

Iatmul culture, 335
Iberian Peninsula; *see* Spain

Ica valley, 106
Ichthyosaurs, 22
Ifaluk people, 254
Iki I., 90
Illinoian glacial stage, 138
Illinois, 137
  University of, 259
Im Fremden Spiegel, 218
Immigrants and immigration, 330
Inca, 198
India, 87, 120, 149, 152, 160, 161, 172, 185, 193, 203, 204, 219, 259, 278
Indian Corn in Old America, 122
Indian Village, 219
Individual opportunity, 214
Indo-China, 85
Indo-European, 127
Indonesia, 35, 92, 172, 193, 323
Indonesian, 175
Indus River, 10, 87, 121
Industry and industrialization, 38
Infraorbital foramen, 51
Instinct, 198
Institute of Inter-American Affairs, 272
Institutional studies and analysis, 251-5, 346
Instituto Nacional de Antropología e Historia, 103, 104
Integration of Anthropology, The, 313–328
Intellectual Differences Between Anthropology and Sociology, 334–338
Intelligence, 198, 233
Intensive Study of Small Sample Communities, The, 276
"Intercultural Relations at Great Whale River," 274
"Intercultural Relations in the Greater Southwest," 274
International Association for the Study of the Quaternary (INQUA), 81
International Committee on Monuments, Artistic and Historical Sites, and Archaeological Excavations, 82
International Conference on Excavations, 82
International Congress of Americanists, 156, 313
International Congress of Anthropological and Ethnological Sciences, 80
International Congress of Orientalists, 80, 81
International Congress of Prehistoric and Protohistoric Sciences, 80, 81, 91
International Convention for the Protection of Cultural Property in the Event of Armed Conflict, 82
International Council for Philosophy and Humanistic Studies, 82
International Directory of Anthropological Institutions, 91, 323, 340
International Federation of Associations for Classical Studies, 81
International Geological Congress, 80
International Journal of American Linguistics, 296
International Seminars for Museum Staff and Educators, 82
International Sociological Association, 330
International Symposium on Anthropology, 65, 80, 91, 170, 177, 247, 293, 313, 314
Interview technique, 194, 213
"Intimations of Transcendence in the Realms of the Inanimate, Animate and Spirit," 297
Inventaria Archaeologica, 80
Invention, 17, 174
Iowa, 39, 139
Iowan glacial period, 139
Iowan-Tazewell, 139
Ipswich (Mass.), 123
Iran, 88, 91, 128, 154
Iraq, 82, 86, 88, 92, 119; *see also* Mesopotamia
Iraq Directorate of Antiquities, 88
Ireland, 87, 323
Iron Age, 87, 122, 128
Iroquois, 189, 253
Irrigation, 37, 38, 42
"Is Western Civilization Disintegrating or Reconstituting?," 206
Ischia I., 87
Ishino, Iwao, 339, 348
Israel, 82, 88, 92, 185, 254; *see also* Palestine
Israel Between East and West: A Study in Human Relations, 219
Israel Exploration Journal, 80
Israelis, 219
Italian painting, 13
Italy, 39, 83, 85
Its, R., 90, 95
Iversen, J., 37, 44, 139, 144
Iwajuku site, 86

Jacobsen, Thorkild, 83, 95
Jahoda, M., 340, 348
Jakobson, Roman, 238, 256, 305
Jalapa (Mexico), 105
Jamaica, 220
James, Alice Galligan, 267, 289
James, E. O., 282
Janson, H. W., 56, 58
Japan, 80, 85, 90, 139, 161, 185, 203, 206, 208, 209, 218, 220, 323, 324, 329
Japanese, 208, 211, 218, 219, 305
Japanese-American Personality and Acculturation, 218, 273
Jarlshof site, 87
Jarmo site, 86, 119, 121, 128
Jarrett, H., 44
Java (Indonesia), 35, 66, 67, 161, 172
J. E. N., 314, 327
Jennings, Jesse David, 102, 109
Jensen, Ad. E., 158, 165
Jensen, L. B., 44
Jericho (Jordan), 86
Jerinimo Brdo cave, 85
Jettmar, Karl, 154, 165
Jews, 216
Johansen, J. Prytz, 251, 256
Johns Hopkins University Medical School, 47
Johnson, Jotham, 86, 87, 92, 95
Jomon culture, 90
"Jonesville," 215, 216
Jong Hak Kim, 90
Jordan, 79, 86, 88
Journal of the Ethnological Society of London, 316, 327
Journal of the Royal Anthropological Institute, 325
Journal de la Société des Américanistes, 100
Journal of World History, 82
Judeo-Christian tradition, 33
Judson, Sheldon, 44
Jupiter Serapion, temple of, 35
Jurisprudence, 321

K

Kachin, 160
  social structure, 159
Kälin, Joseph, 51, 52, 58
Kalambo Falls, 84
Kamasian, 84
Kaminaljuyu (Guatemala), 119
Kansan glacial stage, 138
Kaplan, Bernice Antoville, 276, 284, 291
Kara Kamar shelter, 92
Karatepe (Turkey), 88
Karim Shahir site, 86
Karpinos, Bernard D., 230, 235
Kartan culture, 172

Karve, Irawati, 160, 165, 219, 223
Kawaika-a, 126
Kawashima, T., 209, 223
Kazakhstan (USSR), 89
Kebarah site, 88
Keesing, Felix M., 274, 289
Keilor skull, 140
Kelly, Isabell Truesdell, 165
Kendall, H. M., 44
Kennedy, R., 331, 348
Kennedy, R. J. R., 348
Kenyon, Kathleen M., 86, 95, 171
Keres tribe, 194
Kern, Fritz, 150, 166, 170, 180
Khirbet Kerak site, 88
Khorezm (USSR), 89
Kibbutz, 254
Kidder, Alfred V., 104, 112
Kimberleys (Australia), 173, 174
Kimmig, Wolfgang, 94
Kinder, E. F., 54, 59
Kingsley, Charles, 62, 77
Kinship, 11, 160, 253, 254, 313
  and marriage systems, 11
  structure, 251
  systems, 7, 249, 261, 268
  see also Social organization; Social structure
Kinship Organization in India, 219
Kirchhoff, Paul, 102, 274, 289
Kirgizia (USSR), 89
Kiselev, S. V., 89, 95
Klemm, 330
Klenke, W., 51, 58
Klima, Bohuslav, 85, 95
Klineberg, Otto, 232, 235
Kloepfer, H. W., 231, 235
Kluckhohn, Clyde Kay Maben, 166, 193, 194, 196, 199, 200, 233, 235, 246, 256, 260, 262, 274, 275, 280, 289, 300, 301, 302, 309, 327, 330, 335, 339, 345, 348
Kluckhohn, Florence R., 194, 200, 334, 349
Knossos (Crete), 86, 88, 127
Knowledge and knowledge systems, 11, 18, 19, 20, 21, 24, 31
Knox, Robert, 316
Knuth, Eigil, 101, 109
K'o-hsüeh T'oung-pao, 80
Kobuk R., 101
Köbben, A. J., 260, 262, 267, 268, 280
Koenigswald, G. H. R. von, 85
Kolb, W. L., 339, 351
Koppers, Wilhelm, 28, 30, 156, 157, 166, 167, 169, 170, 172, 174, 177, 180
Korea, 31, 90
Korean Strait, 90
Kourion (Cyprus), 88
Kraemer, J. H., 44
Kraft, G., 170, 180
Krick, I. P., 44
Krieger, Alex D., 101, 109, 140
Kroeber, Alfred Louis, 12, 24, 80, 95, 106, 109, 130, 144, 163, 166, 175, 176, 177, 180, 185, 186, 192, 193, 200, 204, 205, 206, 207, 208, 218, 221, 223, 227, 232, 239, 246, 248, 250, 256, 260, 280, 293, 294, 301, 310, 313, 321, 327, 333, 337, 338, 349
Kroef, Justus M. van der, 273, 287, 290
Krumbiegel, I., 56, 58
Kühlhorn, F., 55, 59
Kulp, J. Lawrence, 118, 130, 134, 136, 142, 145
Kulturens Veje, 157
Kulturkreis, 154, 155, 156, 157, 177, 179, 190, 259
  reassessment of, 154–56
Kurath, Gertrude Prokosch, 289
Kurdistan, 86
Kutscher, Gerdt, 106, 110
Kwakiutl Indians, 303, 314

L

La Barre, Weston, 44, 186, 227, 235, 294, 298, 305, 310
La Naulette jaw, 63
La Perra cave, 122
La Rocque, Aurele, 145
Laboratory of Social Relations, 300
Laboratory of Tree-Ring Research, 140
Lake Algonquin, 137, 138
Lake Chicago, 138
Lake Chippewa, 138
Lake Erie, 35
Lake Michigan, 138
Lake Nipissing, 138
Lal, B. B., 87, 95
Lamarck, J. P. B. A. de M. de, 65
Lamarckism, 8
Lamont Geological Observatory, 134
Lance, John F., 102, 109, 123, 124, 130
Land and Society in Malabar, 219
"Land Tenure, Geography and Ecology in Contact of Cultures," 267
Landes, Ruth, 303
Landman, Ruth Hallo, 262, 286
Lane, Barbara Savadkin, 289
Lange, Charles H., 272, 284
Langer, William L., 79
Language, 11, 16, 17, 64, 72, 74, 78, 118, 174, 244, 276, 296, 301, 302, 305, 314, 318; *see also* Linguistics
Lapouge, 228
Lapp, 152
Las Chimeneas caves, 87
Las Monedas cave, 87
Latin America, 103, 185, 220, 263, 270, 271, 272, 278, 323
Latium forts, 87
Lauffrey, J., 83, 97
Laughlin, William Sceva, 101, 110
Law, 11, 266, 318
Law of Primitive Man, The: A Study in Comparative Legal Dynamics, 267
Lawler, Sylvia D., 231, 235
Lazarsfeld, P. F., 340, 349
Leach, Edmund Ronald, 159, 160, 162, 164, 166, 249, 250, 252, 256, 289
Leacock, Eleanor Burke, 274, 289
Leacock, Seth, 250, 256
Leakey, L. S. B., 57, 80, 95
Lebanon, 82, 83, 88, 121
Lee, Dorothy, 267
Leenhardt, M., 180
Lees, Robert B., 141, 145
Leet, L. D., 44
Lehmann, Henri, 106, 110, 166
Lemert, Edwin M., 274, 289
Lena R., 85, 86, 89
Lenig, Donald, 102, 111
Leonardo da Vinci, 13
Leopold, A., 44
Leopold, L. B., 145
Lerna site, 86, 92
Les Eyzies (France), 85, 92
Lessa, William Armand, 314, 327
Lesser, Alexander, 160, 166
Levallois-Mousterian, 85
Levalloisian, 172
"Levels of Communal Relations," 274
Levi, Hilde, 135, 142
Lévi-Strauss, Claude, 150, 155, 157, 166, 239, 248, 249, 257, 289
Levinson, D. J., 304, 309
Levy, Marion J., Jr., 243, 244, 245, 247, 255, 257, 280, 283
Lewis, Myron F., 313, 327
Lewis, Oscar, 186, 194, 200, 224, 231, 259, 270, 271, 276, 278, 280, 283, 291, 335, 349
Lexico-statistical dating, 30, 118; *see also* Glottochronology
Liang Ssu-yung, 89

Libby, Willard F., 101, 110, 118, 119, 130, 134, 135, 137, 141, 145, 319
Libyca, 80
Life cycle, 209, 266
"Life Cycle, The," 274
Life is with People, 209, 212
Life in a Mexican Village: Tepoztlán Restudied, 259, 276
Life of Vertebrates, The, 11
Lifeways, 213
Liguria (Italy), 85
Lindemann, Helmut, 218, 224
Lingat, Robert, 161, 166
Linguistics, 17, 127, 194, 238, 293, 296, 313, 324, 333; *see also* Language
Linton, Ralph, 188, 191, 193, 200, 238, 248, 257, 301, 310, 318, 326, 327, 330, 339, 349
Lipari Is., 86
Lips, Julius E., 197, 200
Lipset, S. M., 333, 347
Livingstone (No. Rhodesia), 81
Llano Estacado, 124
Llano "man," 123, 124, 125
Lloyd, Seton, 88
"Local Grouping in Melanesia," 274
London (England), 2, 149
  Ethnological Society, 316
  School of Economics and Political Science, 237
  University of, 2, 149, 237
  Zoological Society, 47
Longyear, John M., III, 104, 110
Los Alamos (N.M.), 134, 136
Lot-Falck, Eveline, 166
Lothrop, Samuel Kirkland, 104, 110
Lougee, Richard J., 145
Lough Gara site, 87
Lounsbury, Floyd G., 194, 200
Lowdermilk, W. C., 44
Lowe, C. van Riet, 84, 95
Lowie, Robert Harry, 102, 110, 166, 176, 177, 181, 185, 189, 200, 204, 216, 218, 221, 224, 260, 261, 272, 280, 285, 327, 330, 349
Lüdi, Werner, 139, 145
Lung-Shan (Black Pottery) culture, 90
Lunt, 214
Lusaka (No. Rhodesia), 84
Lutheran Lewis blood antigen systems, 231
Lutra, 5
Lyle's Hill site, 87
Lynd, H. M., 200
Lynd, R. S., 200
Lystad, Robert A., 274, 289

M

Macaque, 54, 70
MacArthur, Douglas, 209
Macbeath, Alexander, 245, 257
McBurney, Charles B. M., 84, 135
McCarthy, Frederic D., 171, 172, 173, 174, 175, 181
McClelland, D. C., 267, 282
MacClintock, Paul V., 138, 145
McConnell, Ursula H., 289
McCown, Donald E., 92, 96
McCown, Theodore Doney, 334, 349
Macdonald, A. W., 166
McFadden, George H., 88, 96
MacIver, Robert M., 301, 310
McKern, W. C., 119, 130
McLennan, 321
MacNeish, Richard S., 101, 102, 103, 105, 110
Madrid (Spain), 81, 91
Magazines, 215
Magdalenian, 85
Magic, 238, 336
Maglemosean, 85
Magnolia Petroleum Co., 136
Mahabharata, 160
Mahdia (Tunisia), 127
Mahony, 171
Maine, 139
Maitland, 275
Maize (corn), 122
  pollen grains, 122
Malabar (India), 253
Malaria, 230
Malay Archipelago, 62
Malay Fishermen: Their Peasant Economy, 237
Maldonado-Koerdall, Manuel, 43, 103, 107, 124, 128
Malin, J. C., 44
Malinowski, Bronislaw, 186, 237, 238, 239, 240, 241, 245, 246, 247, 248, 249, 250, 251, 253, 257, 332, 335, 339, 345, 349
Malkin, Borys, 314, 327
Malleret, Louis, 83
Mallowan, M. E. L., 88, 95
Malta, 88
Mammalia, 23
Mammoth, 37, 102, 103, 139
Man
  as agent of change, 31
  capacity for the cumulative transmission of experience, 20, 22
  dependent upon minerals, 32
  dependent upon other organisms, 32
  as a dominant type, 6, 22
  evidences of, in the Western Hemisphere, 125
  evolutionary dominance of, 7, 20
  influence on vegetation, 37
  obligation toward environment, 43
  paleanthropic forms of, 67, 68
  place in nature, 32–3
  remained one species, 10
  societal nature of, 74
  in the third inter-glacial stage, 125
  as a unique organism, 3, 13, 67, 68
  see also Human
Man and His Works, 176, 196
Managua (Nicaragua), 103
Manchester (England) Anthropological Society, 322
Manchester Examiner and Times, 322
Mandelbaum, David Goodman, 162, 166, 185, 195, 200, 203, 204, 211, 224, 244, 257, 276, 277, 291
Mandrill, 50, 56
Mangabe, 56
Mangelsdorf, Paul, 44, 122, 139, 145
Manila (Philippines), 81, 85
Manitoba (Canada), 136
  University of, 136
Mankato period, 124–5
Mankind So Far, 227
Mann, 171
Mann, W. M., 54, 59
Manners, Robert Alan, 220, 224, 273, 286
Mannheim, Karl, 241, 257, 330, 349
"Man's Place and Role in Nature," 294
"Manual of Ethnological Inquiry," 316
"Manual Prepared by the World Federation for Mental Health, A," 220
"Manus Restudied: An Interim Report," 276
Maori religion, 251
Mappilla kinship, 253
Maraj́o culture, 107
Marchant, James, 62, 64, 77
Marett, R. R., 327
Mari site, 88
Mârib site, 92
Mariën, M.-E., 80
Marin, Louis, 163, 166
Maringer, Johannes, 150, 166
Marriott, McKim, 219, 276, 292
Marseille (France), 127
Marsh, George Perkins, 36, 45
Marsh, Gordon H., 101, 110
Martes, 5

Martin, Paul Sidney, 102, 110, 117, 130
Martinez del Rio, Pablo, 100, 103, 110, 124, 130
Marx, Karl, 18, 192, 321, 330, 337
Marxist ideology, 21
Mason, John Alden, 289
Mass communication, 330
Mass media, 214, 215
Massachusetts, 227
Material culture, 7, 174
Mather, J. R., 120, 121, 130
Matriliny, 160
Matson, F. R., 137
Mauss, Marcel, 248, 250
Maya chronology, 118, 119
  Goodman-Thompson correlation, 118
  Spinden correlation, 118, 119
Maya Indians, 36, 99, 103, 104, 152
Mayapan site, 103
Mayer, Adrian Curtis, 219, 224
Mead, A. P., 65, 67, 70, 71, 76
Mead, Margaret, 185, 195, 196, 197, 200, 204, 209, 212, 213, 214, 218, 219, 220, 221, 224, 232, 235, 276, 292, 304, 305, 332, 334, 349
Meaning of Evolution, 23
"Measures of Divorce Frequency in Simple Societies," 276
Measures of integration, 323–26
Medellin Zenil, Alfonso, 105, 110
Mediterranean, 33, 86, 88, 92, 120, 127, 228
Mednick, L. W., 51, 59
Meerut (India), 87
Megaliths, 86
Meggers, Betty J., 33, 45, 106, 107, 110, 152, 166, 267, 282
Mehigan, J. A., 234
Meighan, Clement Woodward, 103, 110
Melanesia, 171, 173, 193
Melanesian, 175, 190
Meldgaard, Jørgen, 101, 110
Memoirs Read Before the Anthropological Society of London, 316, 327
Mémoires de la Société Ethnologique, 327
Memorial Day, 214
Mendel, Gregor, 13
Menghin, Oswald, 149, 150, 166
Mengin, Ernst, 105, 111
Mennesket og Kulturen, 157
"Menschwerdung und älteste Kultur," 170
Mentalists, 9
Mentifacts, 17, 18, 19, 20
Meroe (Sudan), 88
Merton, Robert K., 200, 240, 241, 242, 243, 244, 245, 247, 254, 255, 257, 301, 310, 332, 339, 345, 349
Mesakin tribe, 276
Meso-America, 30, 100, 101, 103–5, 106, 274; *see also* Central America; Middle America
Mesolithic, 85, 86, 87, 123, 124, 125, 172
Mesopotamia, 38, 83, 91, 137, 152, 153; *see also* Iraq
Mesozoic, 6, 16
Metals and metallurgy, 32, 179
Metazoa, 16, 23
Method and Perspective in Anthropology, 299
Methode der Ethnologie, 176
"Methods of Corn Popping and their Historical Significance," 267
Métraux, Rhoda Bubendey, 212, 213, 214, 219, 224, 334, 349
Mexican, 232
Mexico, 99, 103, 104, 105, 139, 189, 259, 270, 273, 278
Mexico City (Mexico), 35
Meyer, E., 170
Meyerowitz, Eva L. R., 158, 159, 166
Meyer's loop, 72
Michelangelo, 13
Michigan, 133
  Memorial Phoenix Project Radiocarbon Laboratory, 134
  University of, 133, 134, 136, 138
Microethnography, 277
Microliths, 121
Micro-organisms, 15, 32
Middle Ages, 39, 56
Middle America, 153; *see also* Central America; Latin America; Meso-America
Middle East, 121; *see also* Near East
Middletown, 196
Midland (Texas), 125, 140
"Midland Man," 125; *see also* Llano "man"
Migrations, 121
Milankovitch, 134
Miles, W. A., 316
Milingimbian, 172
Mill, John Stuart, 321
Miller, Eric J., 224, 253, 257
Miller, Gerrit S., 66, 77
Miller, J. P., 145
Miller, P. Schuyler, 102, 111
Miller, R. A., 50, 59
Miller, Robert J., 224, 285
Mills, C. W., 338, 349
Milpa, 37
Milwaukee (Wisc.) Public Museum, 119
Mincopies people, 227
Mind of Primitive Man, The, 191
Miner, Horace Mitchell, 159, 167
Mineral resources, 42
Ming Dynasty, 90
Minikin, R. R., 45
Minnesota, 139
  "Man," 138
Minoan script, 86, 127
Mintz, Sidney Wilfred, 270, 271, 283
Minussinsk area (USSR), 154
Miocene, 52, 53
Mississippi R., 35
Mississippi Valley, 36, 138, 141
Mitchell, 171
Mitford, T. B., 88, 96
Mitra, P., 330, 349
Mizuno, S., 96
Mochica culture, 106, 153
Modal Personality, 221, 303, 304
Mogollon Culture of Southwestern New Mexico, The, 115
Mohave tribe, 304
Mohr, Jan, 231, 235
Molinero Perez, Antonio, 87, 96
Mon-Khmer, 155
Mongol, 13, 38, 156
Monkeys, 50, 53
Monkhouse, F. J., 45
Monogenesis-polygenesis controversy, 228
Monotheism, 10
Montagu, M. F. Ashley, 74, 76, 77
Montaignais Hunting Territory and the Fur Trade, The, 274
Montaignais Indians, 271
Monte Albán site, 104
Montesquieu, Baron de la Bièdc et de, 330
Moose, 139
Moral values, 20
Morgan, Lewis H., 188, 189, 190, 200, 321, 337
Morgenthau, Hans J., 218, 224
Mormon, 300
Morphology, 8
Morris, Earl H., 102, 111
Morrison, Paul C., 286
Morss, Noel, 91, 102, 111
Moscow (Russia), 322
Motion pictures, 194, 215

Mt. Etna, 35
Mousterian, 85, 135
Movius, Hallam L., Jr., 85, 91, 92, 96, 172
Mud Fog Papers, 66
Mühlmann, Wilhelm E., 169, 170, 178, 181
Müller, A. R., 285
Mueller, J. H., 337, 349
Mueller, Max, 296
Mukherjee, R. K., 286
Mumford, Lewis, 25
"Munducuru and the Algonkians, The: A Parallel in Processes of Acculturation," 270
Munducuru people, 271
Munro, Robert, 67, 68, 77
Murdock, George Peter, 101, 111, 192, 200, 260, 261, 267, 268, 269, 272, 280, 282, 285, 331, 333, 349
Murphy, Robert Francis, 270, 271, 283
Murray, Henry A., 233, 235, 302, 310
Murray, Raymond W., 77
Murundian, 172
Museum, 82
Museum of Modern Art (New York), 105
Museums, 82
Music and musicology, 17
Musk ox, 139
Muslim, 253
Mussolini, Gioconda, 225
Mustela, 4, 5, 23
Mutation, 8, 13
Mycenae site, 86, 88
Mycenaean, 86, 128
Mylonas, George E., 88
Myth and mythology, 18, 238, 266

N

Naan site, 88
Naco (Arizona), 123
Nadel, Siegfried Ferdinand, 238, 240, 247, 257, 260, 261, 262, 274, 275, 276, 280, 289, 339, 349
Nagai, Michio, 208, 223
Nahua culture, 36
Nai Hsia, 90, 96
Nairobi (Kenya), 80
Nakamura, Jun, 139, 145
Nan-T'ang dynasty, 90
Nanking (China), 90
Naples (Italy), 87
Napoleon, 13
Naroll, Raoul S., 272, 285
Narr, Karl J., 167, 170, 181
Naskapi Indians, 303
National Academy of Sciences (U.S.), 47
National character, 205, 213, 273, 304, 336; *see also* National culture
National culture, 185, 216–8, 340; *see also* National character
National Museum of Canada, 103
National Museum of Korea, 90
National Research Council (U.S.), 136
National Science Foundation (U.S.), 136
National University of Taiwan, 90
Nationalism, 217
Natural Changes in the Physical Environment, 34–6
Natural environment, 120
Natural history, 33, 47, 186
Natural selection, 3, 12, 61, 62, 63, 65, 67, 72
Natural vegetation, 39, 40
Nature, 135
Nature of Culture, The, 205, 293, 300
Nature of the Integration of Anthropology, The, 315–23
Navaho, 40, 251, 277, 300, 304, 335, 339
"Navaho Housing in Transition," 276
Navaho Veterans: A Study of Changing Values, 276
Nayar kinship, 160, 253
Nazca Valley, 106
Naziism, 216
Neanderthal (Neandertal), 65, 66, 84, 85
Near East, 38, 88, 92, 119, 120, 128, 152, 153, 154, 161, 323; *see also* Middle East; Southwest Asia
Near East and the Foundations for Civilization, The, 152
Nebraska, 137
  Academy of Science, 31
Needham, Rodney, 270, 271, 283
Negrito, 155
Negrito Asiens, Die, 155
Negro, 176, 230, 232, 322
Neolithic, 21, 31, 36, 86, 87, 88, 89, 90, 121, 122, 124, 156, 171
  "revolution," 121, 122
Netherlands, The, 297, 323; *see also* Holland
Nett, Betty R., 276, 292
New Caledonia, 92
New Delhi (India), 87
New England (U.S.A.), 39, 123, 137
New Guinea, 63, 172, 173, 193, 214
New Haven (Conn.), 267
New Jersey, 41, 134
New Light on the Most Ancient East, 121
New Mexico, 122, 124, 134, 141, 194, 300
New South Wales (Australia), 172, 174
"New Ways of Presenting an Old Idea: The Statistical Method in Social Anthropology," 262, 267
New World Culture History, 28, 99–114
New York, 80, 99, 189
  Public Library, 212
New Zealand, 81, 135, 136, 172
  Dominion Physical Laboratory, 81
Newcomb, William Wilmon, Jr., 289
Newman, Horatio H., 231, 232, 235
Newman, Marshall Thornton, 235
Newspapers, 215, 216
Newton, Isaac, 13
Nicaragua, 103
Niche, 5, 32, 33
Niebohr, 268
Nile R., 35, 121
"Nilotic Studies," 274
Nimrud (Iraq), 88
Nimuendajú, Curt, 106–7, 111
Nipissing lake-level, 35
Nippold, W., 156, 167
Nippur site, 92
Noëtic, 8, 19, 21, 22, 294
Noguera, Eduardo, 105, 111
Nomad and nomadism, 37
Nonliterate societies, 187–98, 242, 338
Non-Professional Public and the "Native," The, 195–98
Noösphere, 22
Noösystem, 18
Norbeck, Edward, 218, 224
Nordic, 228
North Africa, 84, 135, 158, 219
North America, 30, 100, 101–3, 118, 125, 127, 137, 139, 219, 263, 321
North Bay (Canada), 138
North Carolina, 139
North China plain, 90
Northern Rhodesia, 81, 84

Northern Territory (Australia), 174

Northwest Coast, 139

Northwestern University, 187, 198

Norton ceramic complex, 126

Norway, 122, 141

"Notes and Queries," 316

"Notes on the Social Structure of Some South-Eastern New Guinea Communities," 276

"Novel in Asia and Europe, The," 206

Novels, 207, 221

Number concepts, 214

Nupe tribe, 276

Nyakyusa ritual, 252

O

Oakley, Kenneth P., 66, 77, 78, 84, 96, 98, 133, 139, 140, 145, 147

Oaxaca (Mexico), 104, 105

Ob valley, 89

"Observations on the History of the Incas of Peru, and on the Indians of South Peru," 316

"Observations on the Stature, Weight, &c. of the New Zealanders," 316

Oceania, 81, 84, 92, 153, 172, 174, 263

"Oceanic and Indonesian Affiliations of Australian Aboriginal Culture, The," 171

Oconto (Wisc.), 119

O'Dea, Thomas F., 287, 339, 351

Odum, E. P., 45

Odum, H. W., 338, 349

Oenpellian culture, 172

Office of Indian Affairs (U.S.), 259

Office of Naval Research (U.S.), 209

Ogburn, W. F., 12, 337, 349

Ohio, 39
  Academy of Science, 31
  State University, 219, 329

Ohio Valley, 36, 139, 329

Oikumenê, 206, 207

Oil refining, 38

Ojala, E. M., 45

"Ojibwa Personality and Acculturation," 276

Okayama Prefecture (Japan), 86

Okazaki, T., 96

Okladnikov, A. P., 85, 86, 89, 96

Old Copper Culture, of Wisconsin, 119

Old Smyrna (Turkey), 88

Old World Archeology and Prehistory, 28, 79–98

Old World Bibliography, 91

Olmec culture, 104

Olmstead, David L., 286

Olmsted, M. S., 339, 350

Olszewski, J., 50, 59

Olympia (Greece), 88

"On the Concept of Function in Social Science," 239

On the Edge of the Black Waxey: A Cultural Survey of a Texas County, 259

"On the Negro's Place in Nature," 322

"On the Phonology and Orthography of the Zulu Language and its Kindred Dialects," 316

"On a Reported Infecundity of the Gins of Australia," 316

"On the Romanish Languages of Switzerland and the Tyrol," 316

"On the Science of Language," 316

"On the Tribes of Loreto, in Northern Peru," 316

Opils, E. J., 145

Opler, Marvin Kaufmann, 286

Opler, Morris Edward, 193, 200, 224, 286

Orbitello (Italy), 92

"Order in Changes of Fashion," 205

Ordway, S. H., Jr., 45

Oregon, University of, 187

Oreopithecus, 52

Organic evolution, 169, 302; *see also* Evolution

Organism, 7, 8, 31, 33, 67

Oriental, 33
  civilizations, 152

Oriental Institute (Chicago), 83, 86, 90, 92

Orientalia Suecana, 79

Origin of Species, 61, 63

Ó Ríordáin, Seán P., 87

Osborn, F., 45

Osborne, Homer Douglas, 92

Osmania University, 149

Oued Akarit (Tunisia), 92

Owen, Richard, 62

Oxford (England), University of, 2

Oxus valley, 89

Ozark Mts., 31

P

Pacific Ocean, 137, 153

Pacific Science Congress, 81

Padover, Saul K., 218, 224

Page, John, 230, 234

Painted pottery, 86, 90

Painter, Norman W., 286

Palaeohistoria, 79

Palaeologia, 80

Palau Is., 92

"Palenque Tomb," 104

Paleoanthropology, 91; *see also* Early man; Fossil man

Paleography, 30, 141

Paleo-Indian, 102

Paleolithic, 20, 81, 84, 85, 87, 88, 89, 91, 92, 123, 124, 125, 138, 139, 149, 151, 154, 156, 171, 172, 178

Paleontology, 294, 317

Palerm, Angel, 165, 273, 287

Palermo (Italy), 85

Palestine, 91, 121; *see also* Jordan

Palikao site, 84

Pamir-Alai region, 89

Pan-African Congress of Prehistory, 80

Panama, 153

Pantroglodytes paniscus, 50

Paphos (Cyprus), 88

Papua (New Guinea), 171

Papuan, 72, 173, 190

Paracas, 106

Paranthropus crassidens, 75

Parazoa, 23

Pareto, Vilfredo, 330

Parícutin volcano (Mexico), 35

Park, Williard Zerbe, 301

Parrot, André, 88, 96

Parsons, Talcott, 240, 241, 242, 243, 244, 247, 255, 257, 332, 339, 345, 350

Participant observation, 337

Particularism, 216, 217

Pasadena (Calif.), 42

Passin, Herbert, 219

Pastoralism, 154, 174

Patai, Raphael, 210, 219, 224, 270, 283, 285, 286

Paterson, T. T., 286

Patjitanian, 172

"Patoll, Pachisi, and the Limitation of Possibilities," 270

Patterns, 331

Patterns of Culture, 303

Patterns of Sexual Behavior, 267

Pauk site, 104

Paul, Benjamin D., 194, 196, 200, 274, 282, 289

Paul, Lois, 274, 289

Pax Romana, 21

Peabody, Frank E., 69, 77

Peabody Museum of Archaeology and Ethnology (Harvard University), 79, 85
Pearl Harbor (Hawaii), 41
"Peasant Culture in India and Mexico: A Study in Contrasts," 270
Peasantry and peasant culture, 266, 271, 272, 278, 297
Peckham, Stewart L., 146
Pedersen, Harold A., 286
Pedology, 125
Pedregal area (Mexico), 35
Peking (China), 90
Peking Man, 84
Peloponnesus (Greece), 86
Pelto, Pertti, 204
Penan culture, 271
Peneplain, 35
Penniman, T. K., 330, 350
Pennsylvania, 134, 136, 137
  State College, 137
  University of, 61, 136
  University Museum, 61, 92, 134
Penny Capitalism: A Guatemalan Indian Economy, 313
People of the Sierra, The, 219
Perigordian, 85
Perkins, Maxwell, 214
Perpetually-expanding economy, 33
Perry, W. J., 178, 190, 200
Persepolis, 128
Persian, 296
"Persistence and Change in Local Values of Two New England Communities," 273
Personality, 7, 233, 293, 295, 302, 305, 318
  and culture, 188, 233, 273, 276, 277; *see also* Culture and personality
  development, 214, 305
Personality in Nature, Society, and Culture, 233, 302
"Personality and Peyotism in Menomini Indian Acculturation," 276
Peru, 106, 126, 153
Peterson, E., 45
Petterson, Olof, 290
Péwé, Troy L., 138, 145
Phaistos (Greece), 88
Phenomenon of change, 31-2
Phenotypic system, 7
Philadelphia (Pa.), 80, 91, 134
Philippines, 85, 323
Phillip cave, 119
Phillips, Arthur, 285
Phillips, Philip, 111, 116, 130, 167
Philology, 317
Philosophy, 12, 18, 298, 301
Phoenician, 10
Phylogeny, 51
Physical anthropology, 47, 48, 55, 127, 227, 228, 229, 234, 313, 323, 324, 333
  convergence with cultural anthropology, 233–4
Physical-biological environment, 29, 119
Physiology, 8, 11, 229, 317
Physique, 228, 229-32
Piazza Armerina, 88
Picts, 87
Piggott, Stuart, 87, 96
Pighardes (Cyprus), 88
Pike, L. A., 230, 235
Pikelis, Anna M., 91, 97, 323, 328, 340, 351
Piltdown, 29, 65-7, 75, 84, 139, 140
Pisa (Italy), 81
Pithecanthropus, 66, 67
Pitkin, Donald Stevenson, 282
Pitt-Rivers, J. A. L. F., 219, 220, 224
Pittioni, Richard, 150, 151, 167
Pittsburgh (Pa.), 42
Plains Cree, 215
Plains Cree, The, 203
Plainville, U.S.A., 196, 220
Plant domestication; *see* Agriculture, beginnings of
Plasma-genes, 8
Platyrrhines, 54
Pleistocene, 29, 31, 35, 36, 37, 65, 66, 67, 68, 69, 84, 85, 101, 124, 133, 134, 137, 138, 139, 140, 172
Pleistocene Chronology of the Great Lakes Region, 137
Pliocene, 6, 20, 52, 75
Plough and Pasture, 157
Pocock, D. F., 290
Pohlhausen, Henn, 154, 167
Poidebard, A., 83, 97
Poland, 80, 89, 139, 210
Political Systems of Highland Burma, 159
Politics, 301, 321
Pollen, 37, 122, 139
  analysis, 30, 83, 139
  corn, 122
Polymorphism, 230
Polynesia, 100, 126, 214, 275
Polynesians, 175
Pompeii (Italy), 35, 88
"Ponape: The Cycle of Empire," 276
"Pongid," 52
Population, 38
Porteous, 171
Porter, Muriel Noé, 101, 111
Poseidon, 86
Potsherds, 100
Potzger, John E., 138, 139, 145, 147
Powdermaker, Hortense, 195, 196, 201, 332, 350
Powell, J. W., 321
Powell, T. P. S., 50, 57
"Power Animals in American Indian Art," 272
Prairie, 39
Precipitation, 39
Prehistoric archeology, 30, 149, 157, 170
  increasing dependence of ethnologists on, 149
  link with ethnology, 157
Prehistoric Congress of France, 81
Prehistoric Europe: The Economic Basis, 120
Prehistoric Settlement Patterns in the Virú Valley, Perú, 106
Prehistory, 30, 61, 79, 80, 83, 84, 87, 118, 121, 123, 126, 134, 178, 318
Pretzer, Walter, 31
Primates and primatology, 28, 29, 47-60, 63, 71, 72, 75, 313
  behavior of, 56
  development and growth, 53–4
  ontogeny, 53
  pelves, 51, 52
  phylogeny, 53
  taxonomy, 51-2
Primitive Man and His World Picture, 169
Primitive World and Its Transformations, The, 151, 267, 269, 295, 297, 298
Pringle, R. W., 134
Printing, 17, 20
Problem des Völkertodes, Das, Eine Studie zur historischen Bevölkerungsbiologie, 163
Problem of Water, The, 40–42
Proceedings of the Prehistoric Society, 88
Professional Relations of Anthropologists and Sociologists, The, 340–46
Programa de Historia de America, 100
Progress, 294, 295, 302
Projective tests, 214
Prosimian primates, 49, 51
Proskouriakoff, Tatiana, 105, 111
Prospects for Civilizational Studies, The, 220–2

Provence (France), 83
Psychic unity, 189, 232, 295
"Psychocultural" Studies, 305
Psychology techniques, 194
Psychozoa, 23
Pterodactyls, 22
Pueblo Indians, 126, 194, 303
Puerto Rico, 220, 269, 273
Puglisi, Salvatore M., 86
Pusan (Korea), 90
Pycraft, W. P., 66, 77
Pylos (Greece), 86, 92

Q

Quaternaria, 79
Quaternary, 85
Quatrefages, M. de, 316
Quebec (Canada), 139
Queen, Stuart A., 282
Queensland (Australia), 173
"Question of 'Painless Childbirth' in Primitive Cultures, The," 267
Quiburi site, 126
Quimby, George L., 101, 111, 137, 139, 145, 146

R

R.A.I.; *see* Royal Anthropological Institute of Great Britain and Ireland
Race, 198
  differences, 227
  features, 231
  and history, 150
  relations, 266
  type, 234
Race and Class in Rural Brazil, 273
Races, 231
Races of Europe, 227
Racism, 330
Racists, 228, 232
Radcliffe-Brown, Alfred Reginald, 25, 186, 201, 239, 240, 243, 244, 246, 247, 250, 251, 252, 254, 258, 260, 262, 280, 285, 331, 339, 350
Radin, Paul, 282
Radio, 17, 20, 215
Radioactive dating; *see* Radiocarbon dating
Radiocarbon conference, 119
Radiocarbon dates, 118, 119, 121, 124, 133, 137
  as estimated calendrical dates, 133
Radiocarbon dating, 30, 133, 134–38, 141, 149
  advantages and disadvantages of various methods of, 136
  see also Carbon 14
Radiocarbon dating methods, 134–36
  acetylene proportional counter, 30, 134, 135, 136
  carbon black counter, 135
  carbon dioxide (CO_2) Geiger counter, 30, 134, 136
  carbon dioxide (CO_2) proportional counter, 30, 135, 136
  gas method, 118
  liquid scintillation method, 134, 136
  methane proportional counter, 30, 135, 136
  scintillation method, 30, 134, 136
  screen-wall Geiger counter, 134, 135
  solid carbon counter, 30, 134, 136
Radiocarbon laboratories, 136, 138
  British Museum (Natural History)
  Columbia University
  Humble Oil Company
  Los Alamos
  Magnolia Petroleum Co.
  New Zealand Dominion Physical Laboratory
  Royal Institution (England)
  U.S. Geological Survey
  University of Arizona
  University of Cambridge
  University of Chicago
  University of Colorado
  University of Copenhagen
  University of Göteborg
  University of Groningen
  University of Heidelberg
  University of Manitoba
  University of Michigan
  University of Pennsylvania
  University of Rome
  University of Stockholm
  University of Trondheim
  University of Warsaw
  Yale University
Radiometric assay, 140
Radl, 11
Rafter, T. A., 135, 143, 146
Raimondi, 316
Raj Gonds of Adilabad, The: A Peasant Culture of the Deccan, 149
Rajput nobility, 217
Ralph, Elizabeth K., 146
Rands, Robert L., 100, 111
Range of Adaptation in Physique, The, 229–232
Raper, Arthur F., 273, 286
Rapoport, Robert Norman, 251, 258, 339, 350
Ras Shamra site, 88
Ray, Verne Frederick, 280
Read, K. E., 274, 290
"Reappraisal of Evidence of Plains Influences among the Rio Grande Pueblos, A," 272
Recreation, 38, 41
Red Pottery culture, 90
Reddis of the Bison Hills, The: A Study in Acculturation, 149
Redfield, Robert, 151, 152, 162, 167, 186, 193, 196, 197, 201, 218, 219, 220, 222, 225, 247, 250, 258, 267, 269, 273, 276, 282, 292, 295, 297, 298, 301, 310, 333, 335, 338, 350
Reed, Erik Kellerman, 126, 131
Reelfoot Lake, 35
Régimes Matrimoniaux du Sud-Est de l'Asie, Les, 161
Reichel-Dolmatoff, Gerardo, 106, 111, 292
Reincarnation, 161
Reindeer, 139, 154
Reisenberg, Saul Herbert, 290
Relations of Sociology and Anthropology, Historical Backgrounds of, 330
"Relationships Between Theoretical and Applied Anthropology: A Public Health Program Analysis," 272
Relative Chronologies in Old World Archeology, 79, 91, 121
Relativism, 296, 298
Religious beliefs, 156
Remane, A., 52, 59
Renaissance, 56
Rensch, B., 25, 55, 59
Research in Japanese Social Relations, 329
Resources, 11, 33
"Results of Culture Contact in Two Mongol-Chinese Communities," 273
"Rhodesian Man," 84
Richards, Audrey Isabel, 274, 290, 331, 350
Richardson, L., Jr., 92
Riecken, F. F., 144
Riesen, A. H., 54, 59
Riesenfeld, Alphonse, 167, 274, 290
Riesman, David, 338, 350
Riley, Carroll L., 272, 285
Rimrock (N.M.), 300
Rinaldo, John Beach, 102, 110, 117, 130
Rio Grande, 141
Rio Grande Pueblo Indians, 194
Ritchie, William Augustus, 102, 111

"Ritual and Secular Uses of Vibrating Membranes as Voice Disguisers," 267
Rituals, 11, 18
Ritzenthaler, Robert Eugene, 119, 131
Rivers, W. H. R., 171, 190, 201
Robert S. Peabody Foundation for Archaeology, 136
Roberts, D. F. B., 236
Roberts, Frank Harold Hanna, Jr., 102, 111, 230, 276, 277
Roberts, J. A. Fraser, 234
Roberts, John M., Jr., 292
Robinson, J. T., 52, 59, 76, 77
Roginskii, I. A., 94
Role, 215, 339, 340
Rolph, George Frederick, 316
Rome (Italy), 21, 56, 79, 81, 135, 136
  University of, 135, 136
Rooksby, R. L., 286
Roosa, William B., 146
Rorschach tests, 305, 314
Rosenberg, Bernard, 340
Rosenstiel, Annette, 167
Roumania, 89
Rouse, Benjamin Irving, Jr., 97, 106, 112, 116, 131, 146
Rousseau, Jean Jacques, 18
Rowanduz (Iraq), 85
Royal Anthropological Institute of Great Britain and Ireland, 2, 237
Royal Institution (Great Britain), 135, 136
Roys, Ralph L., 103, 112
Rubin, V. A., 90, 97
Rubio Orbe, Gonzalo, 285
Rudenko, S. I., 89, 97
Ruhe, Robert V., 138, 139, 146
Ruppert, Karl, 104, 112
Russia, 13, 86
Russian, 232
Ruz Lhuillier, Alberto, 104, 112
Ryan, B., 167, 273, 286

S

"Sabbath as a Cultural Theme," 209
Sabratha site, 88
Sacred State of the Akan, The, 159
Safar, Fuad, 97
Saindon, 303
St. Mathurin, Suzanne de, 94
Saint-Simon, Claude Henri, 337
Saipan I., 92
Sakkara royal tomb, 88
"Saldanha Man," 84, 140
Salomon, A., 330, 334, 350
Salzofen cave, 89
Samothrace (Greece), 92
San Juan, P., 225
San Pedro valley, 126
Sanders, Irwin T., 273, 287
Sandler, M., 231, 235
Sandusky (Ohio), 35
Sangmeister, Edward, 94
Sankalia, H. D., 87, 97
Sanskrit, 160, 204, 219, 296
Santa Izabel Iztapan (Mexico), 103
São Paulo (Brazil), 153
Sapir, Edward, 244, 296, 332, 350
Sasaki, Tom Taketo, 276, 292
Satterthwaite, Linton, Jr., 104, 112
Sauer, Carl O., 45, 100, 112, 120, 131
Sauer, Jonathan D., 290
Saurin, E., 85, 97
Savage Hits Back, The, 197
Savanna, 75
Scandinavia, 122, 157, 216, 323
Scarlott, C. A., 43
Schaefer, U., 50, 59
Schaeffer, Claude F. A., 88, 97
Schapera, Isaac, 158, 167, 201, 260, 261, 275, 280
Schatzman, L., 350
Schebesta, Paul, 155, 167, 201
Schlegel, August Wilhelm von, 296
Schleicher, Adolf, 296
Schmidt, Erich F., 128, 131
Schmidt, Wilhelm, 30, 154, 155, 156, 157, 167, 171, 177, 178, 179, 180, 190, 201
Schmitt, Iva Osanai, 276, 292
Schmitt, Karl, 276, 292
Schneider, David Murray, 254, 258
Schneider, J., 337, 350
Scholtes, W. H., 139, 146
School of Oriental and African Studies, 149
Schull, William J., 225
Schultz, Adolph H., 28, 29, 47, 49, 50, 51, 52, 53, 54, 59
Schuster, Carl, 285
Schwartz, C. G., 334, 350
Schwartz, M. S., 334, 350
Schweitzer, Albert, 43
Schwidetzky, Ilse, 163, 167
Science, 10, 11, 12, 13, 14, 15, 21, 43, 47, 48, 62, 301
  analytic approach, 15
  comparative approach, 14
  constitutive approach, 15
  descriptive approach, 14
  differential approach, 14, 15
  evolutionary approach, 15
  integrative approach, 15
  method of approach, 13
  method of understanding and controlling nature, 10
Science of Human Society and Culture, The, 305
Scott, J. P., 233, 235
Sculpture, 17, 207
Scythian, 89
Sears, Paul B., 28, 29, 31, 45
Sears, William Hulse, 102, 112, 139, 146
"Secondary Marriage in Northern Nigeria," 274
Secoy, Frank Raymond, 274, 290
Sedgwick, Adam, 61
Segovia (Spain), 87
Sekino, Takeshi, 90, 97
Seligman, Brenda Zara, 285
Sellards, E. H., 100, 112, 123, 124, 131
Semang people, 155
Senoi people, 155
Şenyürek, Muzaffer Süleyman, 50, 59
Seoul National Museum, 90
Serbia (Yugoslavia), 85
Settlement patterns, 117, 266, 274
Sex, 266
Sexual behavior, 336
Shan culture, 159, 160
Shanidar cave, 85, 92
Shansi (China), 89
Shantz, H. L., 45
Shapley, Harlow, 45, 146
Sheep, 37
Sheet erosion, 38
Sheldon, W. H., 228, 229
Sheppard, P. M., 230, 234
Shetland Is., 87
Shils, Edward A., 257, 331
Shimkin, Demitri Boris, 225
Shinnie, Peter L., 88
Shook, Edwin M., 104, 112
Shtetl, 209, 210, 211, 212
"Shtetl Sees the World, As the," 209
Siamese, 232
Siberia, 86, 89
Sibirium, 79
Sicily, 88
Sickling gene, 230
Siler, J. F., 55, 59
Sillman, Leonard, 72, 73, 74, 75, 77
Sills, David L., 329

Silt, 38, 41
Silvestrini, E., 234
Simon, H. A., 340, 350
Simonson, Roy W., 138, 146
Simpson, George Gaylord, 15, 23, 25
Sinanthropus, 84
Singer, Charles, 164, 167
Singer, Milton B., 219, 222, 225, 261, 280, 282
Singh, Rudra Dott, 224, 286
Siriono Indians, 271
"Siriono and Penan: A Test of Some Hypotheses," 270
"Sixteenth Century and the Twentieth, The," 274
Sjoberg, C., 297, 310
Skin, 227, 229, 230, 231
Skull, 227
Slotkin, James Sydney, 186, 305, 306, 307, 308, 310
Small, A. W., 331, 350
Smiley, Terah L., 140, 141, 146
Smith, Brewster M., 280
Smith, Grafton Elliot, 175, 178, 190, 201
Smith, Marian Wesley, 126, 131, 272, 280, 285, 290
Smith, Michael G., 274, 290
Smith, Robert E., 104, 112
Smith, Watson, 102, 112, 126, 131
Smithsonian Institution, 85
Snell, W. A., 145
Sobaipuri tribe, 126
Social anthropology, 160, 163, 239, 247, 249, 261, 277, 308, 321, 324, 336
  biology, 333
  class, 214, 217
  equilibrium, 238
  function, 240
  heredity, 70
  institutions, 7
  laws, 163
  mobility, 214
  organization, 11, 17, 174, 247, 266, 268, 271, 272, 273, 274, 276; *see also* Kinship
  problems, 330
  psychology, 216, 332
  science, 204, 305–9
  structure, 7, 16, 221, 240, 268, 269; *see also* Kinship
  surveys, 216
Social Anthropology, 186, 299, 305
Social Anthropology at Cambridge since 1900, 163
Social Anthropology in Melanesia, 274
"Social Anthropology and the Method of Controlled Comparisons," 261
"Social Anthropology in Polynesia," 274
"Social Change in an Indian Village," 276
Social Forces, 338, 350
Social Organization of the Fox Indians, The, 313
Social Organization of the Western Pueblos, 274
Social Science Research Council, 187, 293
Social Structure, 193, 260, 268
Sociedad Mexicana de Antropología, 105
Société Ethnologique de Paris, 316, 321
Society, 9, 17, 74, 198; *see also* Social organization; Social structure
Society for American Archaeology, The, 91, 99, 133, 318
Socifacts, 17, 18
"Socio-Cultural Regions of Ceylon," 273
Sociologist's image of the anthropologist, 344
Sociology, 329–51
  and Anthropology, 329–51
Sofue, Takao, 209
Soil, 32, 38, 39, 40, 138
Sokoloff, V. P., 138, 146
"Solar ship," 88
Soldier Groups and Negro Soldiers, 203
Solecki, Ralph S., 85, 92, 97, 102, 112
Solheim, Wilhelm G., II, 92, 97
Solo man, 68
"Some Comments on Comparative Method in Social Anthropology," 261
"Some Recent Changes in Japanese Village Life," 273
"Some Types of Family Structure amongst the Central Bantu," 274
"Sons of Turimpi, The," 276
Sorel, 192
Sorokin, P. A., 24, 301, 310, 337
Sostelid (Norway), 122
South Africa, 67, 73, 84, 140, 158, 198, 314
South America, 30, 100, 106–7, 137, 150, 152, 153; *see also* Latin America
"South American Culture Areas," 272
South Australia (Australia), 172
South Haven (Mich.), 138
Southeast Asia, 81, 120, 160, 161, 193, 323
Southwest (U.S.A.), 40, 117, 329
Southwest Africa, 119
Southwest Asia, 121; *see also* Middle East; Near East
Southwestern Journal of Anthropology, 115, 116, 325
"Southwestern Studies in Culture and Personality," 274
Southwick, C., 55, 57
Soviet
  Communism, 21
  Union, 29, 80, 81, 85, 89
Spain, 81, 86, 217, 220, 259, 270, 271, 278
Spanish, 126
Spanish-American, 300
"Spanish Indian Acculturation in the Southwest," 126
Spaulding, Albert C., 117, 131
Spearman, 233
Speech, 72, 170
Spencer, Herbert, 321, 330, 337
Spencer, Robert Francis, 163, 167, 201, 299, 310
Spencer, W. Baldwin, 171
Spengler, Oswald, 24, 204, 297
Spicer, Edward Holland, 126, 131, 220, 225, 250, 258, 267, 282
Spinden, Herbert Joseph, 118, 272, 285
Spindler, George D., 276, 291, 292
Spiro, Melford E., 194, 199, 254, 258, 295, 310
Spoehr, Alexander, 92, 193, 201
Srinivas, M. N., 160, 168, 219, 225, 251, 252, 258
Stagg, F. L., 228
Stallings, W. S., Jr., 102, 113
Stamp, L. Dudley, 38, 45
Star Carr site, 85
Starck, D., 49, 60
Starosel's cave, 85
Starr, Betty Warren, 274, 290
Statistical comparisons, 267–9
Status, 215, 339
"Status Rivalry and Cultural Evolution in Polynesia," 275
Steiner, P. E., 50, 60
Steinmetz, Sebald Rudolf, 268
Stellenbosch industry, 84
Stern, C., 230, 236
Stevenson, H. N. C., 290
Steward, Julian Haynes, 105, 113, 117, 131, 190, 197, 198, 201, 220, 224, 260, 262, 269, 270, 271, 273, 280, 283, 286, 287, 332, 350
Stewart, Omer Call, 282
Stockholm (Sweden), 135, 136
  Högskola, 135, 136
Stoddard, Theodore L., 106, 113
Stone-working, 124
Stone Age, 124, 150
Stonehenge, 87, 138
Story of Man, The, 298, 326

Stout, David Bond, 292
Strasbourg (France), 81
"Strategy of Culture History, The," 116
Stratigraphy and Archaeology of Ventana Cave, Arizona, The, 115
Straus, William L., Jr., 77, 84, 97
Strauss, L., 334, 350
Strepsirhini, 49
Strodtbeck, F. L., 339, 351
Strömsvik, Gustave, 104, 113
Strong, William Duncan, 106, 113
Stroud, C. P., 14
Structural
  analysis, 273
  anatomy, 11
  dynamics, 339
  functional analysis, 241, 339, 340, 346
  linguistics, 313
  studies, 339
Structure, 243, 244, 253
"Struggle for existence," 29
Stubbs, Stanley A., 102, 113, 141, 146
Studies in Chinese Thought, 219
Studies "at a Distance," 207–14
Studies in Islamic Culture History, 219
Study of Complex Civilizations, The, 203–25
Study of Culture at a Distance, The, 212, 213
Study of the Type, The, 227–8
"Stuttering among the North Pacific Coastal Indians," 274
Stuttgart (Germany), 218
Style, 206, 313
Styria (Austria), 89
Subbaro, B., 97
Submarine archeology, 30, 83, 127
Submarine geology, 137
Sudan, 88, 335
Suess, Hans E., 135, 137, 146
Sultan Tepe site, 88
Sumer, 297
Sumerian, 10
Summer Seminar on Acculturation, 293
Sumner, W. G., 335, 351
"Supernatural World and Curing, The," 274
Susa site, 88
Suttles, Wayne Prescot, 274, 290
Sutton, H. Eldon, 231, 236
Sutton, O. G., 45
Swadesh, Morris, 118, 131, 141, 146, 186, 296, 310, 311, 314
Swanscombe remains, 69, 75
Swanton, John Reed, 101, 113
Sweden, 79, 141
Switzerland, 47, 157
Sybaris site, 83
Symbolic logic, 238
Symbols and symbolism, 17, 18, 332
Symposium on Local Diversity in Iroquois Culture, 276
Syria, 79, 82, 88, 91, 121
Szafer, W., 139, 146
Szechwan (China), 85

T

Tabasco (Mexico), 104
Taboo, 11
Tajin (Mexico), 104, 105, 273
Takashima: A Japanese Fishing Community, 218
Tamaulipas (Mexico), 103, 122
Tangier, 92
Tanqazi (Sudan), 88
Tappen, Neil Campbell, 78
Tara (Eire), 87
Taravad, 253
Tarsius, 49, 50, 53
Tasmania, 173
Tasmanian, 173, 175
Tauber, H., 142
Tawney, R. H., 338, 351
Tax, Sol, 25, 80, 97, 131, 147, 186, 201, 220, 225, 248, 250, 258, 274, 290, 313, 327, 333, 337, 339, 351
Taxonomy, 23, 51–3, 294
Taylor, Gordon D., 287
Taylor, J. du Plat, 88, 97
Taylor, Walter Willard, Jr., 102, 128, 131
Tazhikistan (USSR), 89
Te Punga, M. T., 147
Technological civilization, 41
Technological innovations in England, 219
Technology, 269, 274, 301
Tectonic change, 34, 35, 37
Tegnaeus, Harry, 285
Teilhard de Chardin, Pierre, 18, 52, 60, 78, 84
Telegraphy, 17
Teleost fish, 22, 23
Television, 215
Tennessee, 35
  valley, 41
  Valley Authority, 41
Teosinte, 122
Teotihuacan site, 36, 104, 105
Tepexpan Man, 103, 138, 140
Tepoztlán (Mexico), 278, 297
Ternate I. (Indonesia), 62
Ternifine (Algeria), 84
Tertiary, 66, 67, 69, 73
Tetrapoda, 23
Texas, 40, 124, 139, 217, 300
Tharp, B. C., 139, 145
Themes in French Culture, 219
Theology, 62
Theoretical Anthropology, 9, 162, 246, 298
Theory and Methods, in Archeology, 116–9
Thermodynamic law, 33
This is Our World, 31
Thomas, D. P., 57
Thomas, Edward S., 147
Thomas, W. I., 12, 335, 351
Thomas, William L., Jr., 91, 97, 323, 328, 340, 351
Thompson, Homer A., 92, 98
Thompson, J. Eric S., 104, 113
Thompson, Laura Mead, 45
Thomson, A. S., 316
Thomson, T. R. Heywood, 316
Thornbury, W. D., 45
Thornthwaite, C. W., 45
Thorpe, 171
Three Centuries of Women's Dress Fashion: A Quantitative Analysis, 205
Three Navaho Households, 276
Thurnwald, Richard, 302, 311
Tian-Shan Mts., 89
Tibet, 172
T'ien Ju-k'ang, 219, 225
Tierra del Fuego, 198
Tigris R., 121
Tikal site, 118
Tikopia I., 276
Timbuktu (French Sudan), 159
Time Depths and Basic Types of Languages, 296–7
Tinian I., 92
Titian, 13
Titiev, Mischa, 328
Tlatilco site, 119
"Tobacco in New Guinea and Other Areas of Melanesia," 274
Toda people, 190
Todd, Arthur, 230, 236
Todd, T. Wingate, 236
Tönnies, 297
Toepfner mound (Ohio), 119
Toirano (Italy), 85
Tokyo University, 209
Toledo (Ohio), 35
Tolstov, S. P., 89, 98
Tolstoy, Paul, 100, 113
Toltec Indians, 103, 104
Tomars, A., 335, 351

Tonkin (Viet Nam), 153
Tools, 11, 20, 67, 71, 84, 121, 124, 125, 150, 151, 169, 170
Torah, 211
Torres Strait, 173
Totemism, 7, 171
Totonac Indians, 105, 273
Toward Communication between Sociology and Anthropology, 329–51
Toward Understanding Germany, 216
Toynbee, Arnold J., 24, 25, 204, 207
Trace metals in soils, 138
Transformation Scene: The Changing Culture of a New Guinea Village, 276
Transmigration, 161
Transmission, 169
Trans-Pacific, 153
  diffusion, 30, 153
  migrations, 153
Transport, 38
Tratz, E., 51, 60
Travancore (India), 204
Tree of Culture, The, 326
Tree-ring analysis; *see* Dendrochronology
Tree rings, 133
Tremblay, Marc-Adelard, 276, 292
Trever, John C., 141, 147
Tri-Institutional Program of Archeological Research in the Pacific Islands, 92
Trik, Aubrey S., 104, 114
Tripoli (Libya), 82
Tripolitania (Libya), 88
Tripolye (USSR), 89
Trobrianders, 245, 335
Trondheim, 135, 136
  University of, 136
Trowbridge, A. C., 147
Tryon, L. E., 118, 130, 145
Tsushima I., 90
Tswana tribes, 158
Tucson (Arizona), 135
Tula region (USSR), 104
Tumin, Melvin M., 225, 292
Tundra, 139
Tunisia, 92, 127
Tupaia, 49, 54
Tupi tribe, 276
Turgot, Anne Robert Jacques, 337
Turkestan (USSR), 81, 89
Turkey, 79, 80, 92
Turn to the Individual, The, 228–9
Turner, R. E., 25
Turney-High, H. H., 219, 225, 246
Tuscany (Italy), 92
Tushingham, A. Douglas, 86, 95
"Two Concepts of Power," 272
Tyler, Ralph, 235
Tylor, Edward Burnett, 64, 188, 189, 190, 201, 268, 307, 316, 324, 328, 330
Type and types, 117, 227, 228
"Types of Latin American Peasantry: A Preliminary Discussion," 272
"Types of Pastoral Nomadism in Central and Southwest Asia," 272
Typological Studies, 117
"Typology of Peasantry for Latin America, A," 272
Tyson, 56
Tzeyang (China), 85

U

Uadji, 88
Ugarit site, 88
Ukraine (USSR), 85, 89
Underhill, Ruth M., 274, 290
UNESCO (United Nations Educational, Scientific, and Cultural Organization), 2, 29, 82
United States of America, 38, 42, 139, 189, 259, 323, 324, 325, 326, 332
  Geological Survey, 134, 135, 136, 138
Universality and Variation in Human Nature, 227–36
University Museum; *see* Pennsylvania, University Museum
Unwin, 268
Urban, 121, 152
  civilization, 10, 21, 152
  revolution, 121
Urkultur, 156, 157
Urry, W. D., 137
Ursprung der Gottesidee, Der, 156
Useem, John, 339, 351
Usher, Abbott Payson, 311
Utah, 102, 137
Uxmal site, 104

V

Vaal R., 84
Valders-Mankato glacial maximum, 118
Valley of Mexico, 103
Vallois, Henri V., 50, 60, 78
Values, 206, 207, 269, 275, 276, 296, 298, 300–2, 313, 332, 339, 340
Van Buren, A. W., 92, 98
Vandenberg, Steven G., 231, 236
Varve chronology, 133, 137
Vazquez-Calcerrada, P. B., 287
Vedic, 160
Vegetation, human influence on, 37
Velsen, J. van, 282
Ventris, Michael, 86, 98, 127, 128, 131
Vera Cruz (Mexico), 105
Veröffentlichungen der Urgeschichtlichen Arbeitsgemeinschaft in der Anthropologischen Gesellschaft in Wien, 79
Vernon, Philip E., 236
Verulam, J. B. G., 45
Veyret, P., 45
Vial, A. E. L., 45
Victorian England, 330
Vienna (Austria), 80, 149, 169
  School of Ethnology, 154, 155, 156, 157, 176, 330
  University of, 169
Viet Nam, 83, 161
Viking Fund Medals and Awards, 47, 115, 227, 293
Vikings, 87
Villafrancian, 84
"Village Social Organization in Greece," 273
Village that Chose Progress, A: Chan Kom Revisited, 276
Villagra, Agustín, 105, 113
Viqueira, Carmen, 273, 287
Virú Valley (Peru), 117
Vix site, 87
Voegelin, Carl F., 97, 131
Voegelin, Eric, 334, 351
Voegelin, Erminie Wheeler, 331, 332, 340, 351
Völker und Kulturen, 157
Voget, Frederick William, 253, 258, 277, 292
Vogt, Emil, 87
Vogt, Evon Zartman, 276, 277, 287, 292, 309, 339, 351
Volcanism, 34, 35, 37
Vom geistigen Menschenbild der Urzeit, 150

W

Wace, 88
Wagenen, G. van, 54, 58, 60
Wagley, Charles, 220, 225, 273, 274, 276, 287, 290
Waitz, 330
Walapai tribe, 304
Wales, H. G. Quaritch, 167
Wallace, Alfred Russel, 13, 29, 61, 62, 63, 64, 65, 66, 68, 69, 70, 72, 74, 75, 78
Wallace, Bruce, 231, 235
Wallace, Ernest, 292
Wallis, Wilson D., 246, 299, 314, 328

Waltham (Mass.), 293
Ward, Lauriston, 28, 79, 91, 136
Ward, Lester, 321
Ward-Perkins, J. B., 88
Warfare, 266
Warner, W. Lloyd, 185, 201, 204, 214, 215, 218, 221, 225, 332, 351
Warren, S. H., 142
Warsaw (Poland), 136
Washburn, Sherwood L., 78
Washington, D.C., Anthropological Society, 321
Washuzan site, 86
Waste
  disposal, 38
  domestic and industrial, 41
Water, 34, 39, 40, 41
  cycle, 40
  supply, 38, 41
  table, 38, 40
  transport, 41
Water-Babies, The, 62
Watson, D. M. S., 78
Watson, James B., 250, 258, 292, 309
Wauchope, Robert, 101, 113, 147
We, the Tikopia: A Sociological Study of Kinship in Primitive Polynesia, 237
Weatherwax, P., 122, 131
Weaver, J. E., 46
Webb, William S., 102, 113
Weber, Alfred, 297, 301, 311
Weber, Max, 241, 258, 297, 330, 338, 345, 351
Weckler, Joseph Edwin, Jr., 78
Wedel, Waldo Rudolph, 120, 131, 167
Wedgewood, Camilla H., 274, 288
Weeds, 37
Weidenreich, Franz, 232
Weiner, J. S., 66, 78, 84, 98, 139, 147
Weismann, August, 8
Weltfish, Gene, 168, 284
Weltgeschichte der Steinzeit, 149
Wendorf, Fred, 102, 113, 140, 147
Wenner-Gren Foundation for Anthropological Research, Incorporated, 3, 65, 80, 83, 90, 91, 134, 164, 170, 177, 187, 219, 228, 247, 293, 294, 313
West, James (pseud. Withers, Carl), 201, 332, 351
West Africa, 198; *see also* Africa
Westermann, Diedrich, 158, 168
Westermarck, Edward A., 337
Western Europe, 38, 39, 87, 203; *see also* Europe
Western United States and Canada, 102–3
Westernization, 338
Wheat, Joe Ben, 102, 117, 131
Wheeler, R. E. Mortimer, 268
White, Leslie A., 25, 156, 162, 176, 178, 181, 189, 190, 194, 198, 202
White, Sidney E., 147
Whitehead, Alfred North, 68
Whiting, Beatrice Blyth, 282
Whiting, John W. M., 260, 261, 267, 268, 269, 281, 282
Whorf, B. L., 297
Wichita Kinship: Past and Present, 276
Wiener, A. S., 51, 60
Wiens, Herold J., 168
"Wild Men and Beast Children," 316
Willems, Emilio, 225
Willet, F. J., 286
Willett, Hurd C., 134, 147
Willey, Gordon Randolph, 101, 104, 105, 106, 111, 113, 116, 130, 132, 167, 168, 248
Williams, Guy H., 231, 236
Williams, Howel, 103, 113
Williams, Roger J., 236
Wilson, L., 339, 351
Wilson, Monica, 251, 252, 258
Wind, 40
Winnipeg, University of, 134
Wisconsin glacial period, 138, 139
Wisdom, Charles, 274, 291
Witchcraft, 275, 276
"Witchcraft in Four African Societies: An Essay in Comparison," 274
Witthoft, John, 102, 114
Wolf, Eric Robert, 270, 271, 272, 273, 283, 285
Wolf, Kathleen L., 287
Wolfe, Thomas, 214
Wolff, Kurt H., 186, 329, 334, 338, 351
Wommara, 174
Wood, Albert E., 147
Woodbury, Richard B., 102, 104, 114
Woodland period, 102
Work with informants, 214
World Federation for Mental Health, 220
Wormington, H. Marie, 124, 132
Woytinsky, E. S., 46
Woytinsky, W. S., 46
Wright, Arthur F., 219, 222, 225
Wright, Chauncey, 72, 73, 74, 78
Wright, G. O., 282
Wright, H. E., Jr., 147
Wright, Sewall, 232, 236
Writing, 17, 20, 21
Würm, 232
Wyoming, 216

X

Xerothermic, 138

Y

Yakuts people, 156
Yale University, 31, 92, 134, 136
Yang-shao (China), 89
Yang-shao culture, 90
Yangtze R., 90
Yankee City, 196, 214, 215
Yap, M. A., 282
Yap I. kinship, 254
Yaqui culture, 250
Yarmuk (Israel), 88
Yayoi culture, 90
Yellow fever, 55
Yellow R., 153
Yenisei valley, 89
Yerg, D. G., 46
Yerkes, 48
Yorkshire (England), 85
Yoruba people, 198, 270
Young, J. Z., 11
Young, Rodney, 92
"Your Body and Your Life," 228
Yucatan (Mexico), 103, 104, 117, 193, 196
Yugoslavia, 89
Yukagir people, 156
Yuki tribe, 304
Yuma culture, 123
Yurok tribe, 304

Z

Zagros Mts., 121
Zborowski, Mark, 209, 211, 212, 225
Zen Sun, E-tu, 273, 287
Zeuner, F. E., 133, 134, 147, 154, 164, 168
Zhdanko, T. A., 89, 98
Znaniecki, F., 335, 351
Zoology, 11, 47, 48, 55, 317
Zoser step pyramid, 88
Zuckerman, S., 50, 52, 53, 54, 57, 60, 69, 78
Zürich (Switzerland), 50
  University of, 47
Zumberge, James H., 138, 147
Zuñi Indians, 194, 300, 303, 304

PRINTED IN U.S.A.

लाल बहादुर शास्त्री राष्ट्रीय प्रशासन अकादमी, पुस्तकालय
Lal Bahadur Shastri National Academy of Administration, Library
मसूरी
MUSSOORIE.

यह पुस्तक निम्नांकित तारीख तक वापिस करनी है।
This book is to be returned on the date last stamped.

दिनांक Date	उधारकर्ता की संख्या Borrower's No.	दिनांक Date	उधारकर्ता की संख्या Borrower's No.

573
Gur.

110476
अवाप्ति संख्या
Acc. No. ~~[illegible]~~

वर्ग संख्या
Class No.

पुस्तक संख्या
Book No.

लेखक
Author Thomas. ed.

शीर्षक
Title Current Anthropology :
A supplement to Anthropology
1956.

निर्गम दिनांक Date of Issue	उधारकर्ता की संख्या Borrower's No.	हस्ताक्षर Signature

573
Gur

~~1958~~

LIBRARY
LAL BAHADUR SHASTRI
National Academy of Administration
MUSSOORIE

Accession No. 110476

1. Books are issued for 15 days only but may have to be recalled earlier if urgently required.
2. An over-due charge of 25 Paise per day per volume will be charged.
3. Books may be renewed on request, at the discretion of the Librarian.
4. Periodicals, Rare and Refrence books may not be issued and may be consulted only in the Library.
5. Books lost, defaced or injured in any way shall have to be replaced or its double price shall be paid by the